

TECHNOLOGY

REVIEW July 1955



technology review

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Tuesday night, September 28th: the Lummus initial operating team first fed oil into the crude unit of the 30,000 B/D refinery which Lummus designed, engineered and constructed for a major oil company at Mandan, North Dakota.

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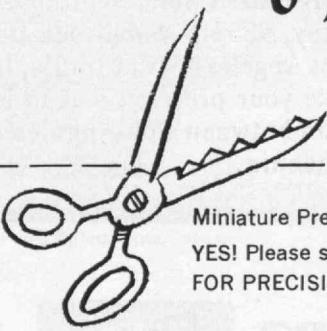
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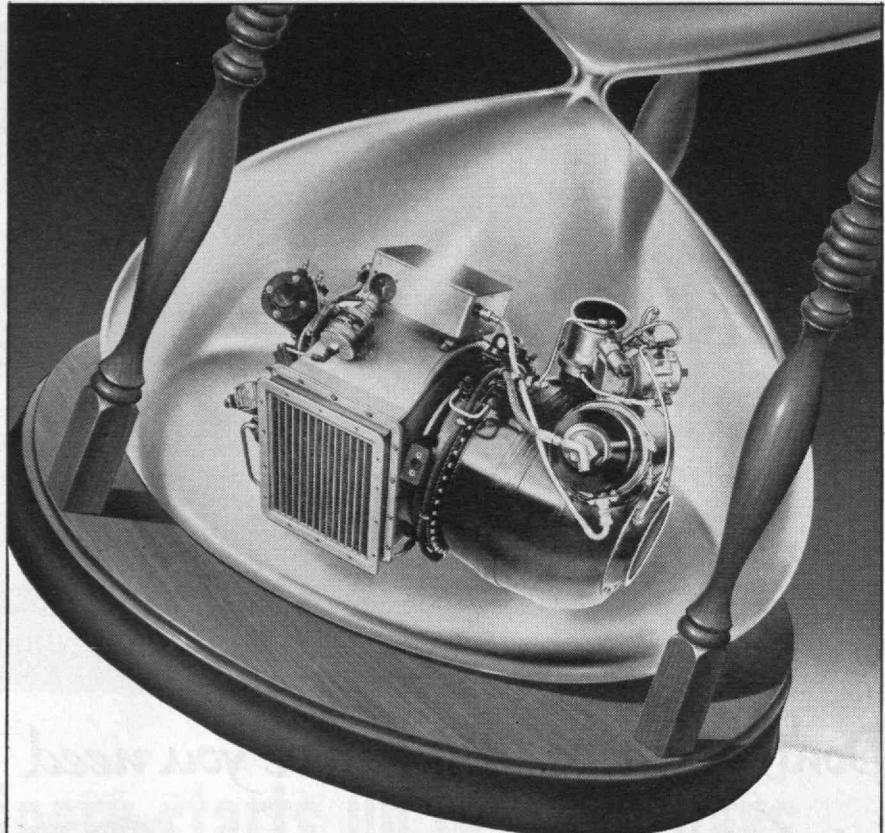
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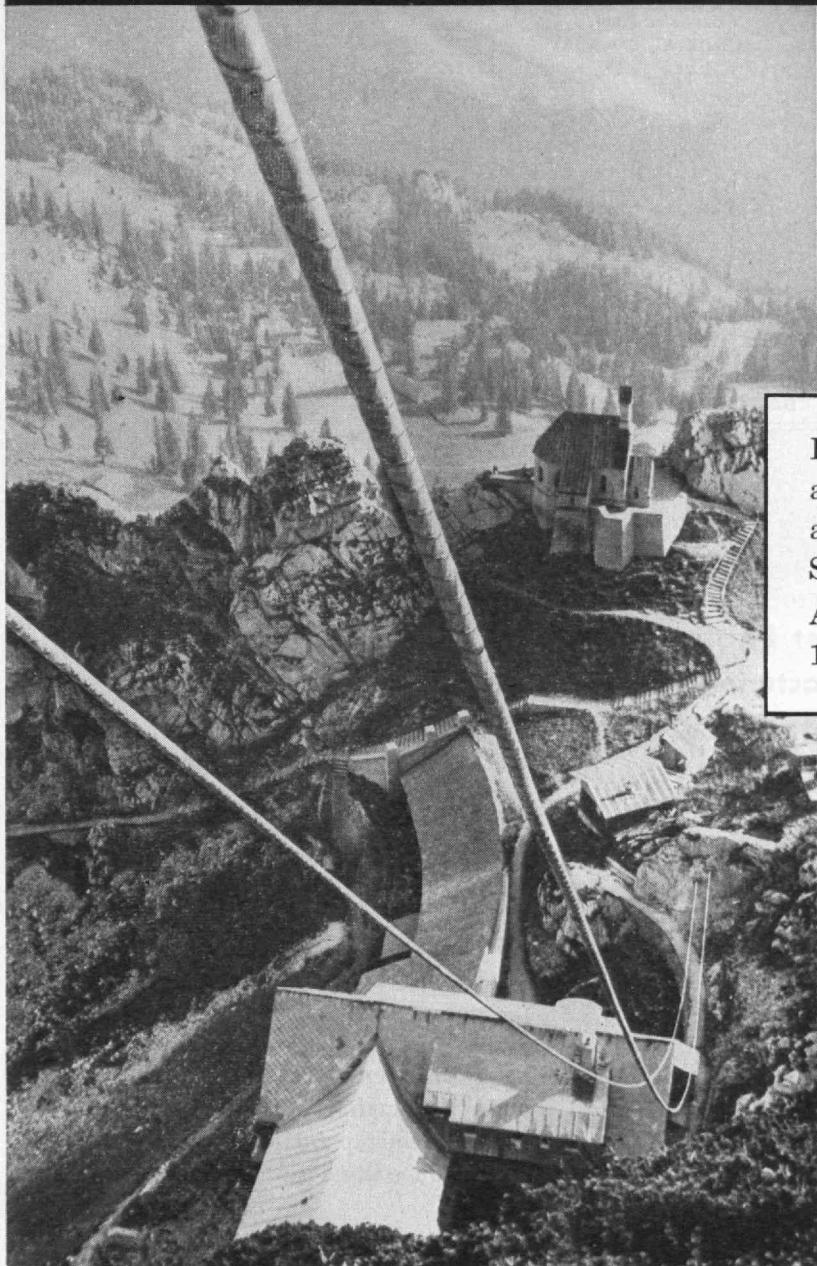
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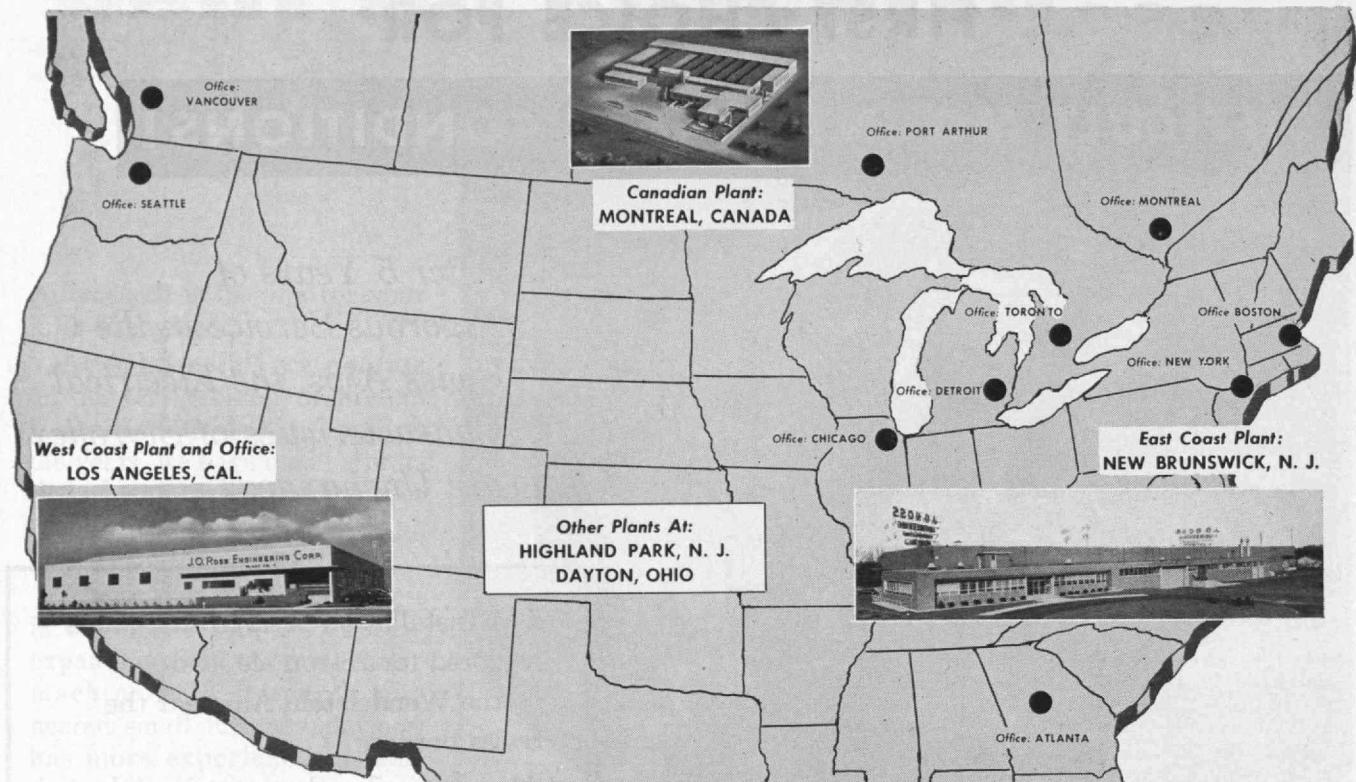


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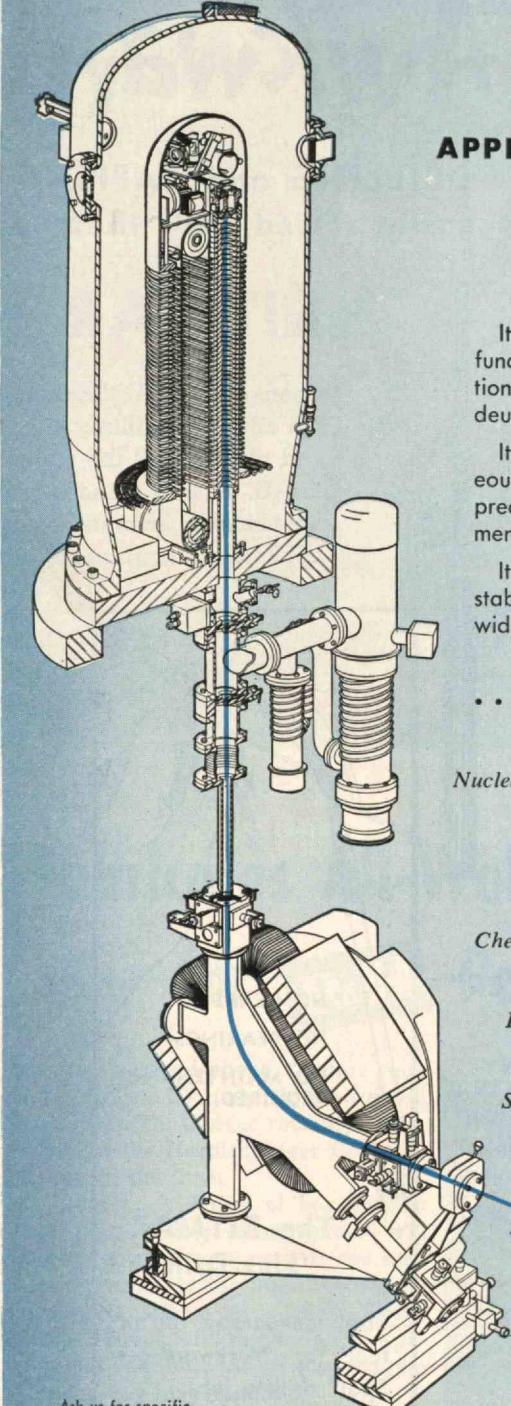
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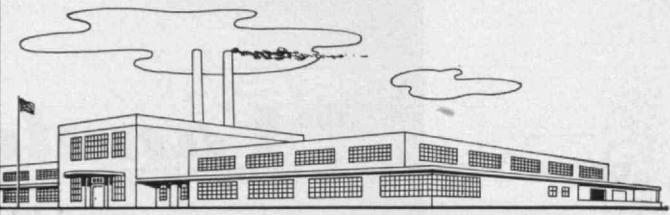
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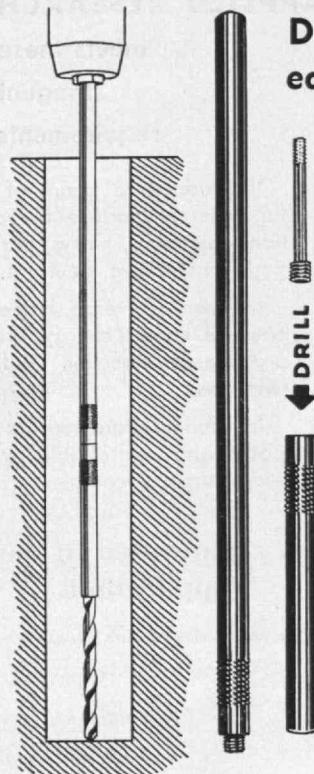


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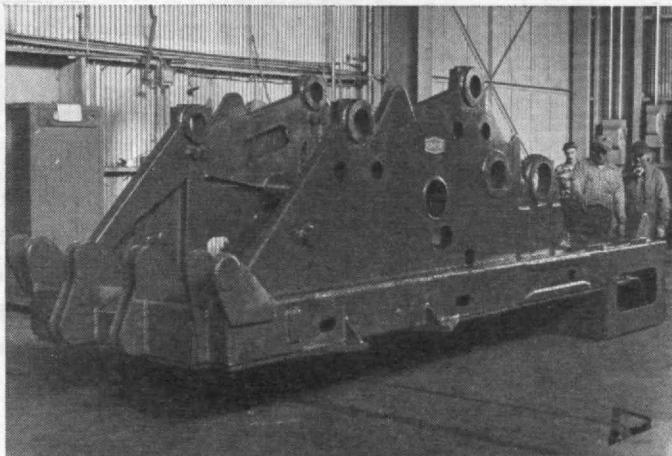


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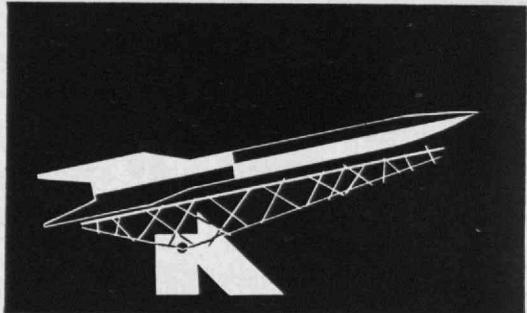
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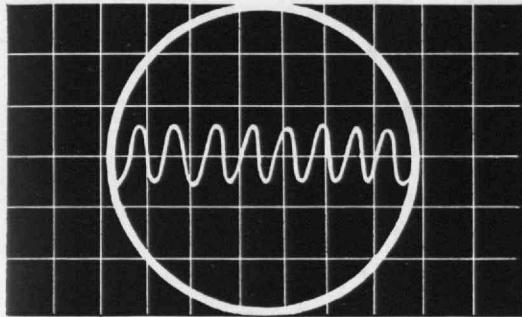
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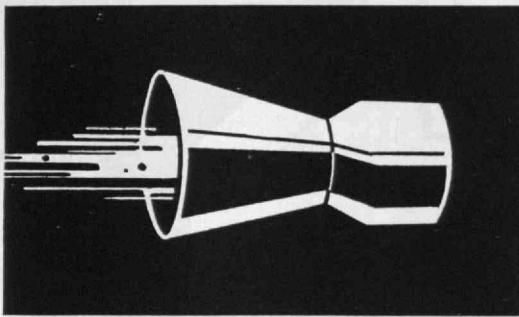
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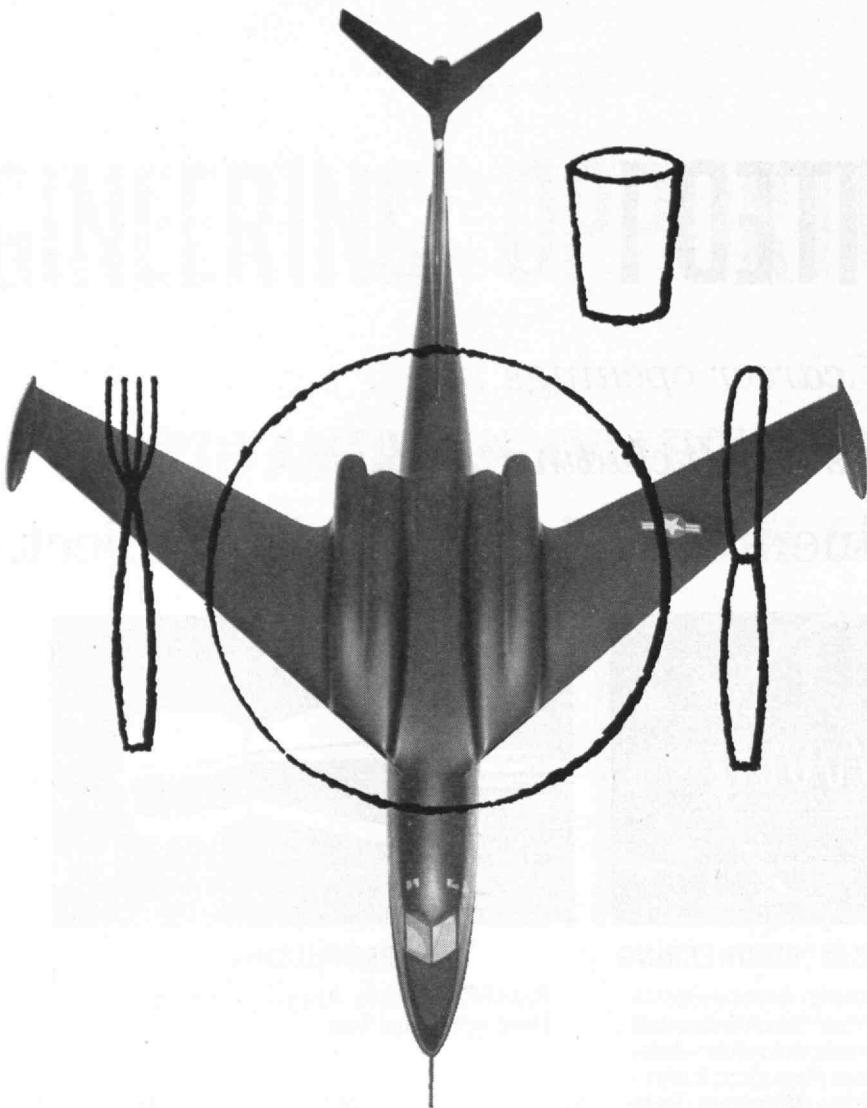
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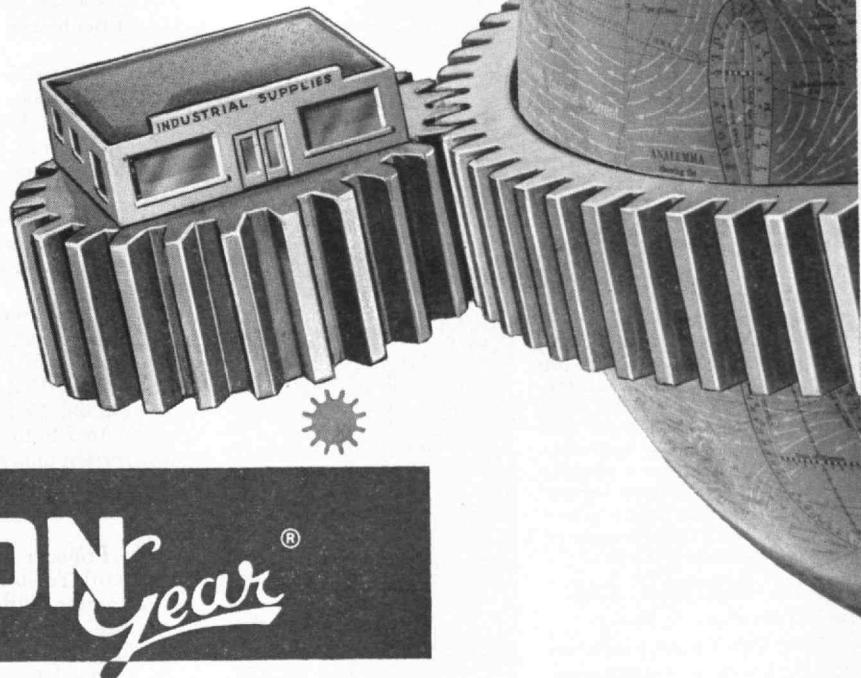
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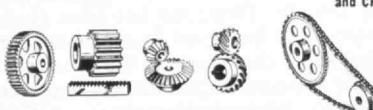
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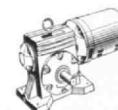


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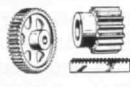
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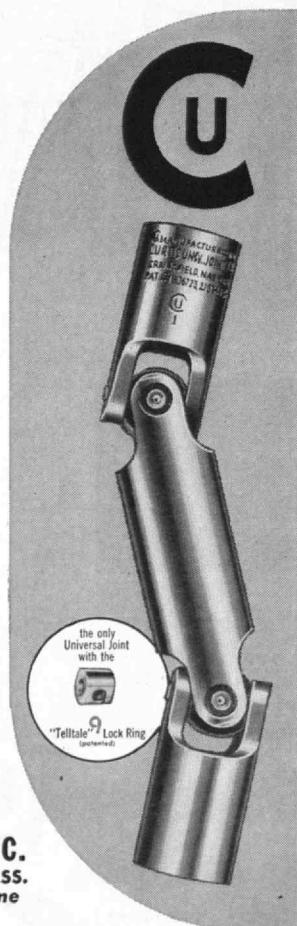
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THE TABULAR VIEW

An unusual array of brilliant talent appears in this issue of The Review as a result of addresses given in connection with Commencement or Alumni Day Events.

Shields Warren, — whose article on "Impact of Atomic Energy on the Life Sciences" appears on page 471, is Professor of Pathology, New England Deaconess Hospital. Dr. Warren was director of the Division of Biology and Medicine of the Atomic Energy Commission from 1947 to 1952 and is currently a member of the A.E.C. Advisory Committee on Biology and Medicine. He is consulting pathologist for several hospitals, and chairman, member, or consultant of dozens of medical, academic, and government committees in the fields of cancer, radiation pathology, and radiobiology.

T. Keith Glennan, — President of Case Institute of Technology, is author of "Impact of Atomic Energy on Our Economy and Way of Life" (page 473). Dr. Glennan is a businessman, scientist, and educator. During World War II he was director of the U.S. Navy Underwater Sound Laboratory, operated by Columbia University in New London, Conn. From 1950-1952 he served as a member of the Atomic Energy Commission and, after several years of public service, in 1953 he resumed the presidency of the Case Institute of Technology, in Cleveland.

James R. Killian, Jr., '26 — President of M.I.T., reports on the state of M.I.T. in his annual address "The Technology of Peace" (page 476). His farewell address to the graduates, "A Benison from Friends," appears on page 484. Dr. Killian has recently completed important work on secret national defense as chairman of a committee appointed by President Eisenhower.

Frederick May Eliot, — President of the American Unitarian Association since 1937, delivered the address, "Freedom is a Noble Thing," (page 479) at the Baccalaureate. Educated at Harvard University, Dr. Eliot also has degrees from Carleton College, Meadville Theological Seminary, the University of Minnesota, and Mount Holyoke College. He was ordained Unitarian minister in 1915, was associate minister of the First Parish Church, Cambridge, 1915-17, and minister of Unity Church, St. Paul, 1917-38.

Sir Roger Makins, — British Ambassador to the United States since 1952 gave the commencement address, "The March of Mind," which appears on page 480. Sir Roger was educated at Winchester and Christ Church, Oxford, was elected Fellow of All Souls College, Oxford, and was admitted to the bar in 1927. In 1928 he decided to enter foreign service and from 1934 to 1942 was in the Foreign Office in London. During World War II he served in West Africa and at the Allied Headquarters Mediterranean Command.

Princess Ileana of Romania, — whose article "Looking Toward Tomorrow," appears on page 482, is an accomplished lecturer, author of two books dealing with Romania in the war years, and author of many magazine articles. Trained in social work by her mother, Queen Marie, Princess Ileana founded the Girl Scout movement in Romania and aided in the building and operation of a hospital in Romania before and after the Russian occupation.

Arthur S. Flemming, — on leave as President of Ohio Wesleyan University, now serves as Director of the Office of Defense Mobilization. His thoughts on "Is War Inevitable?" are recorded on page 483. Dr. Flemming has been chairman of the Advisory Committee on Personnel Management for the Atomic Energy Commission, chairman of the Management-Labor Policy of the War Manpower Commission, and recently member of the President's Advisory Committee on Government Organization, a member of the Defense Department Organization Committee, and a member of the United States Civil Service Commission.

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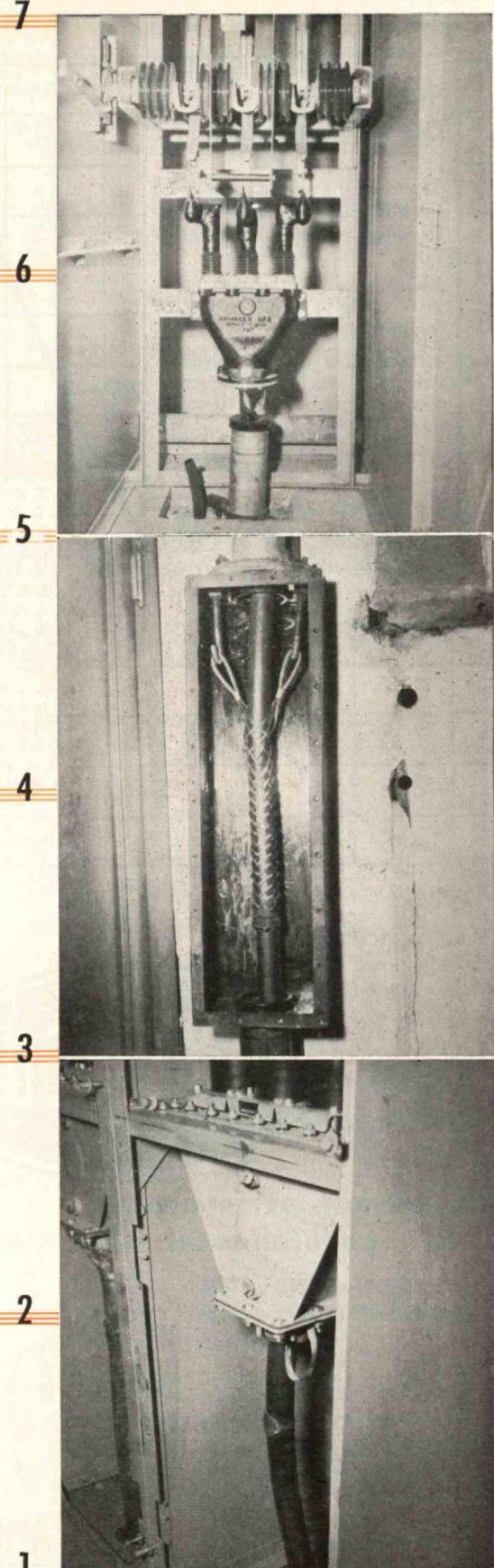
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Top Photo: Pothead of 500 kva dry-type transformer on seventh floor. Secondary feeds 110/220 volts to four floors above.

Middle Photo: Wire mesh grip on sixth floor holds weight of cable. Feeder runs through four-inch steel conduit from first to seventh floors.

Bottom Photo: Feeder connection at air circuit breaker on first floor. Cable transmits 4160 volts.

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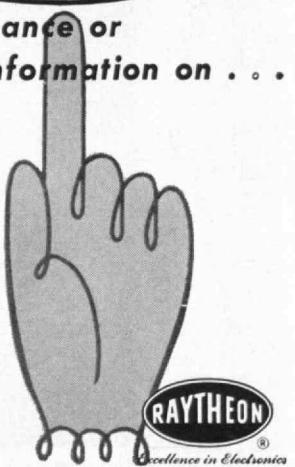
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MAIL RETURNS

Credit Where Due

From Ward Allen Howe:

Raymond E. Hansen is a good photographer but the cover picture of the May issue credited to him happens to be one that I took. I am sure that neither he nor the editor will object to this correction.

New York, N. Y.

The view of the Jefferson Memorial and apple blossoms in Washington, D.C., as used on The Review's cover in May does indeed represent the work of Mr. Howe who has our apologies for incorrect credit line.—Ed.

Moral Energies

From Arthur L. Williston:

I read with great interest your article on the "Limitations of Logic in Engineering Education" which appears in the March number of The Technology Review.

To me it is very fascinating to have the Head of one of the very important departments at Massachusetts Institute of Technology venture to publicly criticize the educational procedures of the Institute and suggest radical changes for the improvement thereof.

I like especially your inclusion within the range of disciplined and developed human attributes *emotional*, *moral*, *physical*, and *mental* qualities, and I only regret that you did not add to these four important features the one which I regard as certainly of primary importance: i.e., moral energies.

(Concluded on page 512)

The Review is not published during the summer months following July. This issue, therefore, concludes Volume 57. Number 1 of Volume 58 will be published on October 27 and dated November. Readers who bind their copies are reminded that if they possess nine issues of Volume 57, their files are complete. An index to the volume will be ready on September 15 and will be supplied post free upon request.



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ALLOY STEELS PAY OFF		
CASE NO.	CASE NO.	PART
1	1	IRON AND STEEL OR COAL WADERS
2	2	ANCHOR CHAIN
3	3	ARMING REPORTS
4	4	BALL CASES IN UNIVERSAL JOINTS
5	5	BAND SAWs
6	6	BOLTS
7	7	BORING BARS
8	8	BRAKES
9	9	TRIMMERS FOR PASSENGER CARS
10	10	CABLE TOOL AND DRILLING BITS
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12	12	CRYSTALLIZATION TANKS
13	13	CRANE PADS IN STEEL MECHANISMS
14	14	CHIPPED AND HOZ. RIVETS
15	15	CHRISTMAS TREES
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17	17	COAL CUTTER BARS
18	18	COLLAPSIBLE BOXES
19	19	CONSTRUCTION CHAMBERS OF AIRPORT CONVEYOR BELTS
20	20	COMPRESSED-GAS CYLINDERS
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22	22	COVATATORS
23	23	DRAY RIMS
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26	26	FERNCHEM
27	27	CHLORINE AND CHEMICAL FIRE EXTINGUISHERS
28	28	FOOD-HANDLING EQUIPMENT
29	29	GRINDING BALLS
30	30	HAND SHOVELS
31	31	HOLLOW RAILS
32	32	HORNSHOE CAULS
33	33	NOT-WASTE TANKS
34	34	HYDRAULIC THRUSTERS
35	35	INDUSTRIAL BOOTS
36	36	INDUSTRIAL SCREENS
37	37	INDUSTRIAL SPACERS
38	38	JACKS FOR PIPELINE CUTTERS AND OTHER EQUIPMENT
39	39	JOIST SUPPORTERS FOR STEEL ENGINES
40	40	ORE CARS AND ORE TRUCKS
41	41	Oil-well HEADING LINES
42	42	ORE AND COAL CRUSHERS
43	43	Ore Mine SCRAPERS
44	44	OVERHEAD TRAVELING CRANES
45	45	PITMAN CAMS
46	46	POLE LINE HARDWARE
47	47	POWER MOVERS
48	48	PRESSURE VESSELS
49	49	PROTECTOR SHELLS AND PROTECTOR CASES
50	50	RIVET SETS
51	51	ROLL RACES IN ROLL MACHINES
52	52	SAMS
53	53	SLASHER ROLL JACKETS
54	54	SLIDE CHAIN
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57	57	TRANSFORMER SHELLS
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case histories

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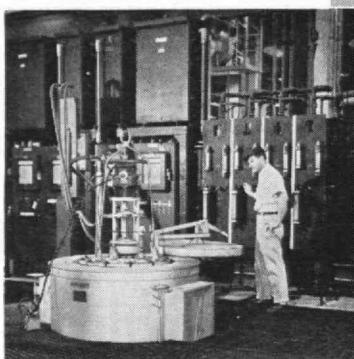
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- greater pay load
- lower operating costs
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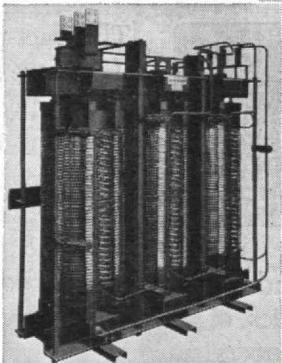
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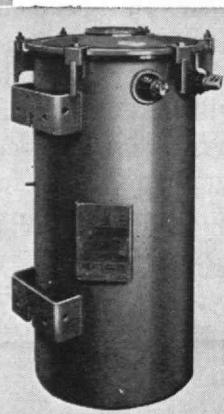
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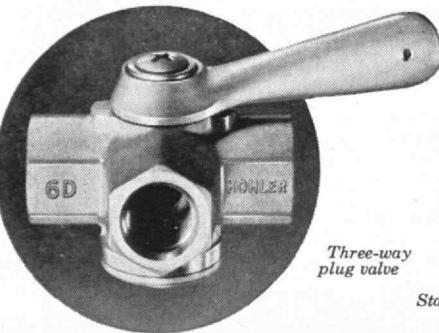
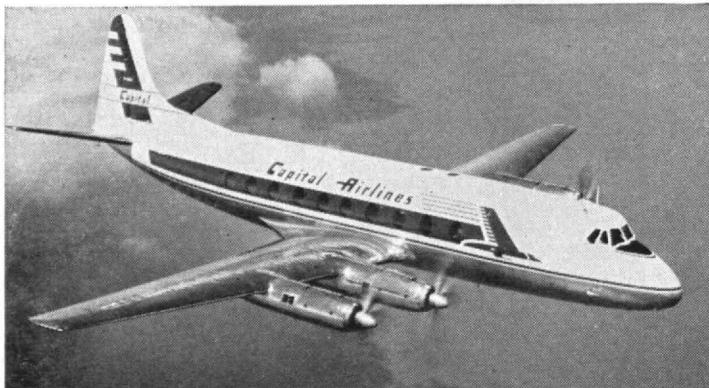
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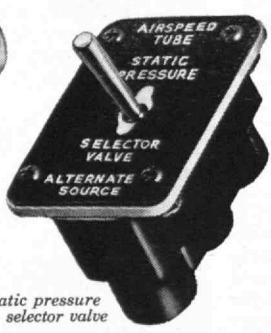
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*Three-way
plug valve*



*Static pressure
selector valve*

KOHLER

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used in new turbo-prop airplanes

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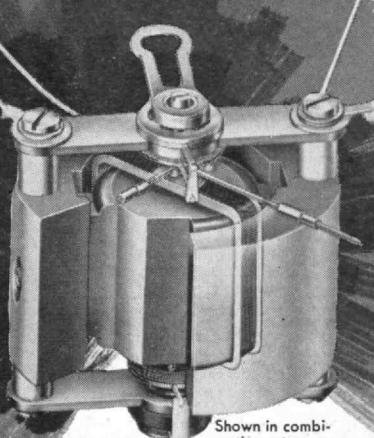
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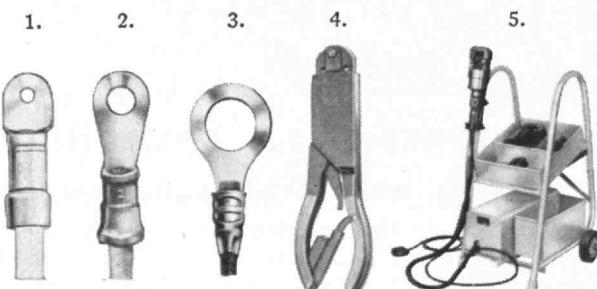
Mr. U.A. Whitaker, 1923
President

Mr. John R. Vickery, Jr., 1935
Manager Glen Rock Engineering

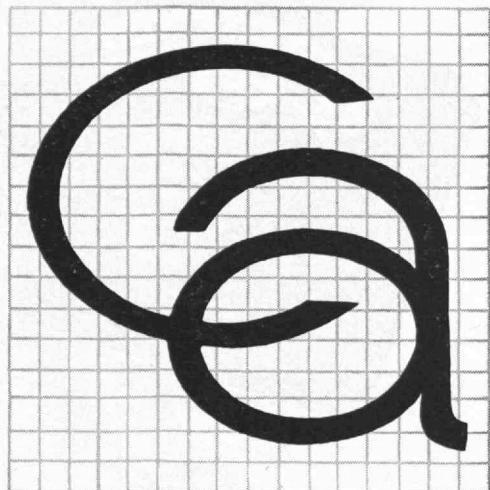
Mr. Franklin H. Wells, 1918
Director of Research

Mr. James H. Whitley, 1954
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Mr. Marshall M. Holcombe, 1936
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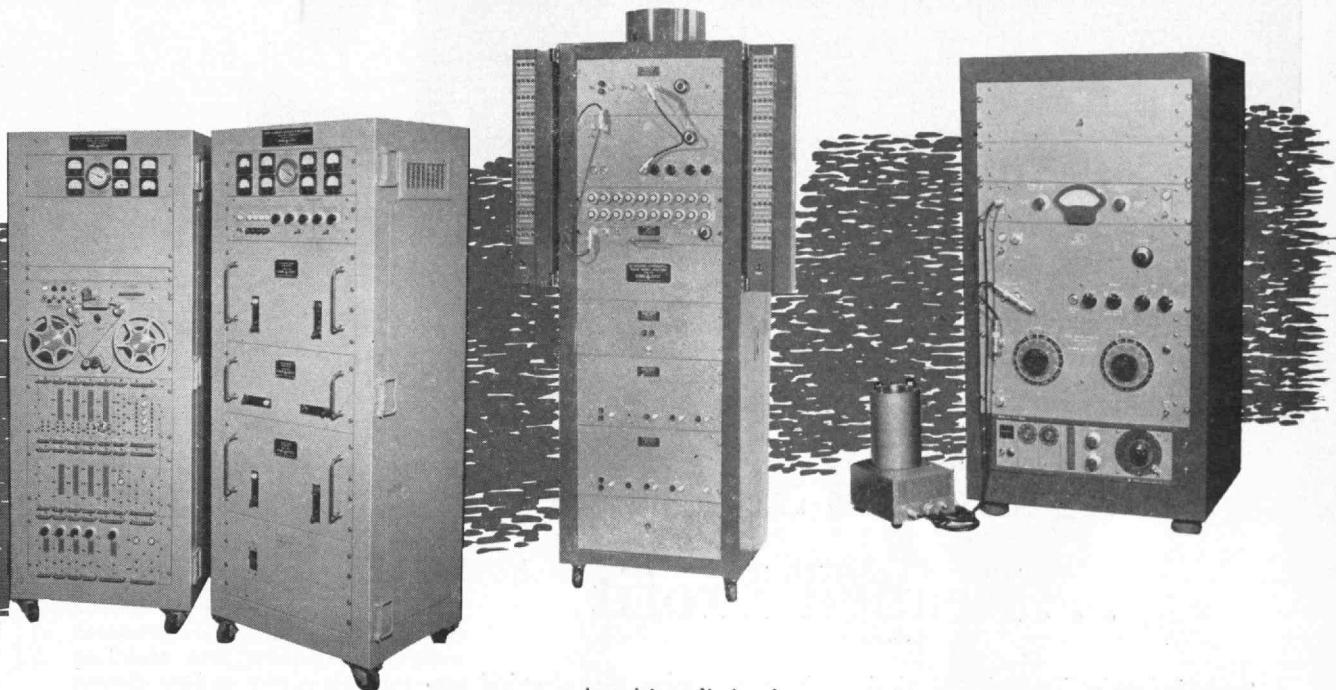
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THE TECHNOLOGY REVIEW



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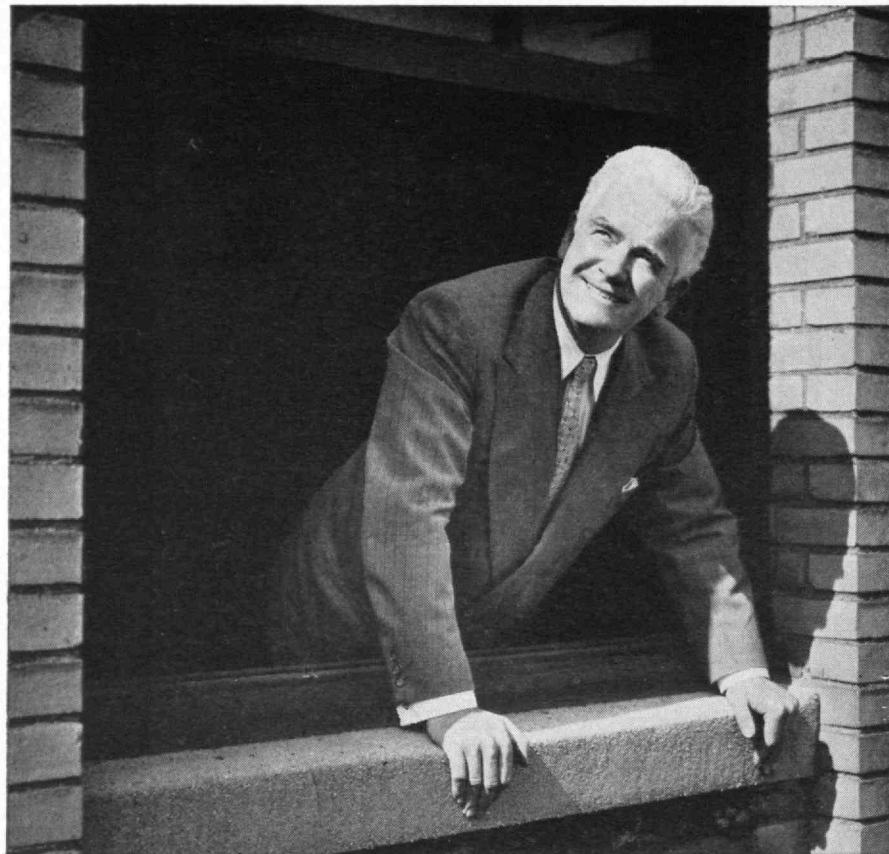
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ATOMIC
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COMPANY

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Bought Blue Sky ... Reaped Profit

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Your questions will be welcomed—and please be sure to write for a copy of Bulletin GB, a quick summary of dust collection problems and facts of interest to management men.

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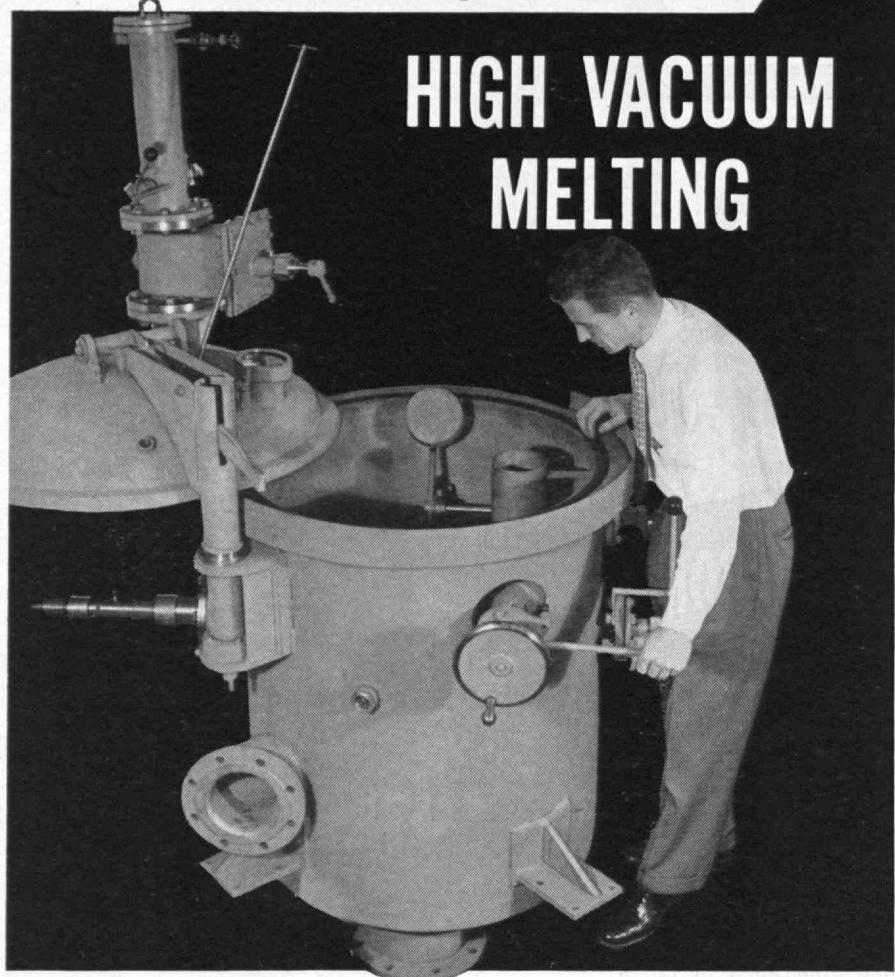


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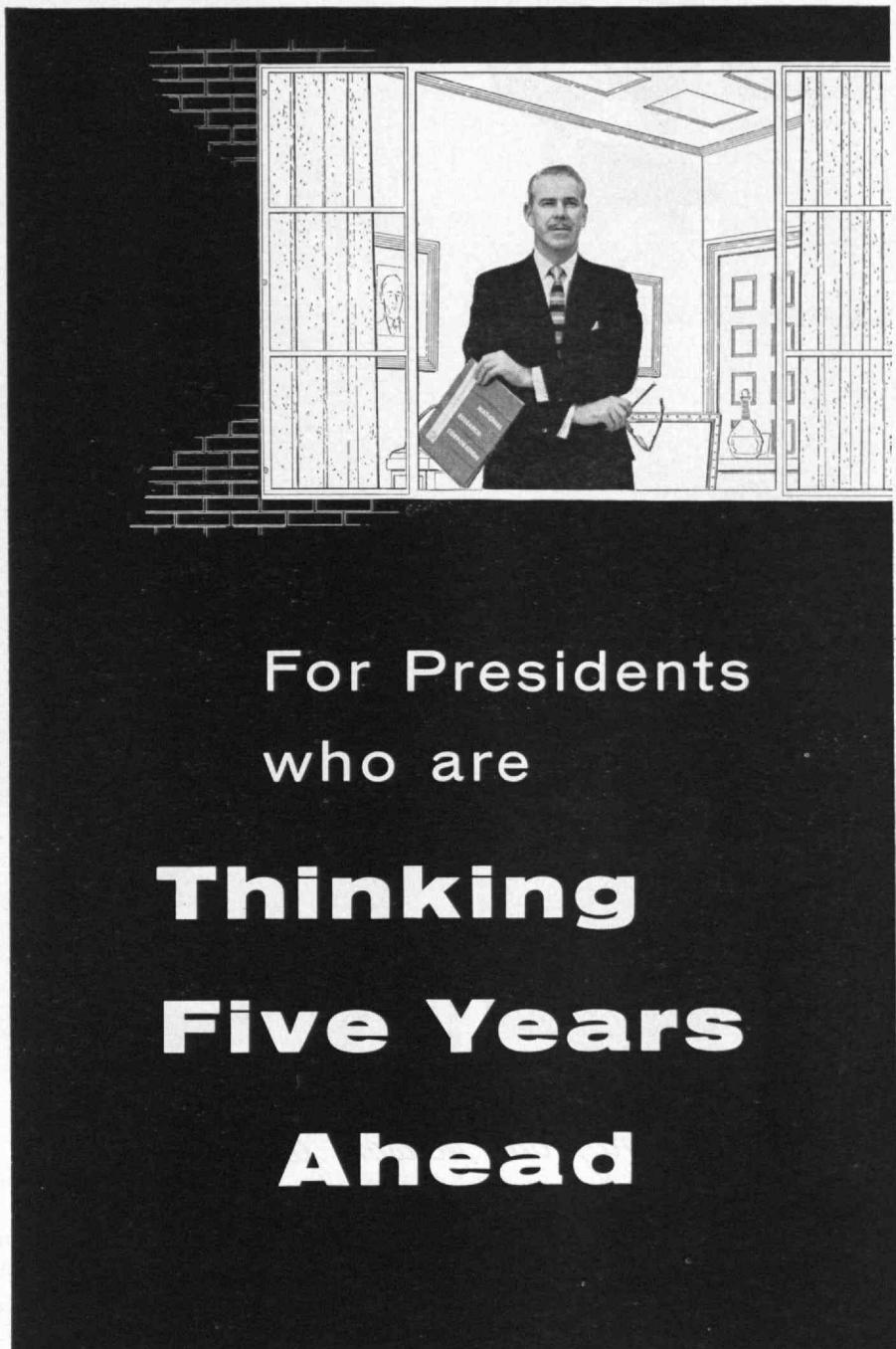
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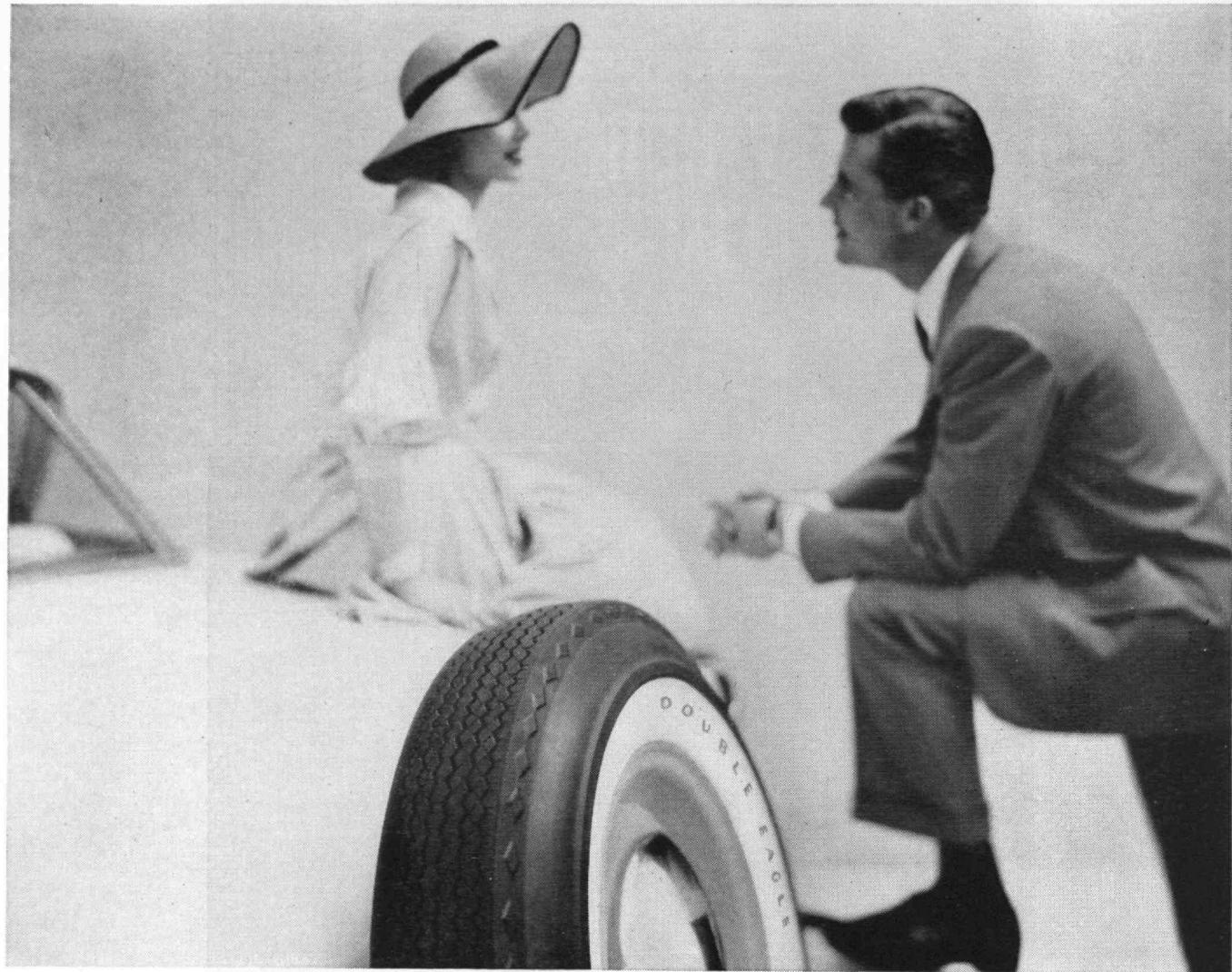
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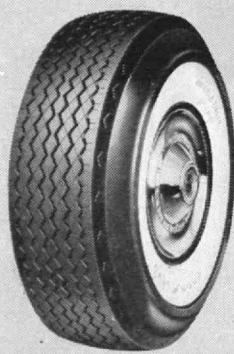
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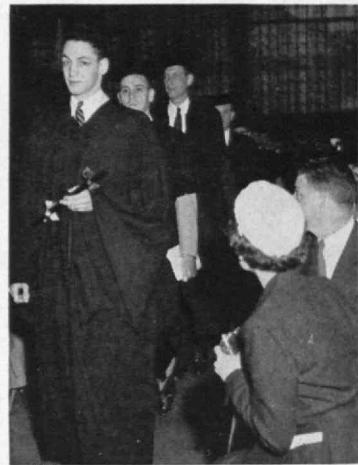
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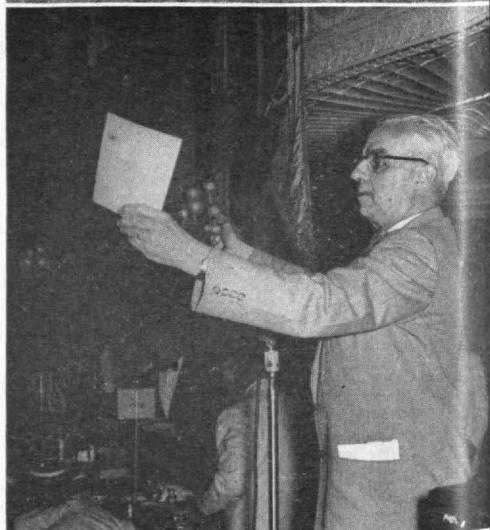
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Pictorially Speaking

From *The Review's* pictorial record of events of Commencement and Alumni Day are these illustrations of interesting people and scenes. (Top row, left) General Kurt M. Landon, Admiral Edward L. Cochrane, '20, Vice-president of M.I.T., and General Einar B. Gjelsteen, who participated in R.O.T.C. Commissioning exercises. (Top row, right) Participants in the Baccalaureate were (left to right) Father J. Edward Nugent, Dr. Frederick May Eliot, who gave the Baccalaureate Address, President J. R. Killian, Jr., '26, Reverend John Crocker, Jr., and Rabbi Herman Pollack. (Left column, top) Sir Roger Makins, Commencement Speaker, and President Killian. (Left column, bottom) President Killian and Marshall Dalton, '15, discuss finances. (Right column, top) Charlotte A. Bragg, '90, and Godfrey L. Cabot, '81, are among the oldest Technology Alumni to attend the Alumni Day luncheon in the Du Pont Court. (Right column, bottom) O. B. Denison, '11, leads singing at the Alumni Banquet. (Bottom row, left) Seated at the Faculty table at the Alumni Banquet were (Left to right) Joseph E. Conrad of M.I.T. Club of New York, Horace S. Ford, Thomas T. Pitre, Fred M. Hartwell, and James E. MacDonald. (Bottom row, center) Hugh S. Ferguson, '23, President of the Alumni Association, presents certificate of Honorary Membership to John J. Rowlands, Director of M.I.T. News Service. (Bottom row, right) Dwight C. Arnold, '27, receives gavel from Hugh S. Ferguson, whom he succeeds as president of the Alumni Association.



THE TECHNOLOGY REVIEW



Vol. 57, No. 9

July, 1955

The Trend of Affairs

Soft Policy

DESPITE the annual crops of graduates who receive their degrees in science or engineering — estimated to be about 20,000 this year — educators and personnel consultants remain deeply concerned about the nation's continuing shortage of engineers. Newspapers and technical journals print page after page of advertising in which firms offer high wages, good pension plans, suburban working conditions and other inducements to young men — and women — to follow the engineering profession. Some concerns have established co-operative plans with universities by which their employees may earn advanced degrees while engaged in professional engineering activities. Other firms offer summer work to engineering students with the sole hope of employing a few of them when they receive their degrees a year or two hence.

Yet the shortage continues. The deficit appears to be most acute in the fields of electrical and aeronautical engineering, although mechanical engineering and metallurgy are not far behind. Colleges are not able to train enough engineers to meet the nation's present industrial needs, and the prospects for the future are not too encouraging.

As the nation reached the peak of commencement activities, the *New York Times*, for June 19, called attention to this problem in a front page article whose head proclaimed: "Shortage of Engineers Feared Because of Drop in Science Study." Pointing out that the technical manpower shortage is of grave concern to such leaders as Howard A. Meyerhoff, executive director of the Scientific Manpower Commission, M. H. Trytten, director of the Office of Scientific Personnel of the National Research Council, M. M. Boring, chairman of the Engineering Manpower Commission of the Engineers Joint Council, and Henry H. Armsby, chief for engineering educa-

tion of the United States Office of Education, the *Times* looks for the major cause of the present situation in the nation's high and college preparatory schools.

Bluntly asking, "What is behind the sharp decrease in secondary school study in science and mathematics?" the *Times* provides an alarming answer to its own query. It states that "the decline in students' interest in science has been attributed to a 'soft' educational policy, which has turned students away from the 'hard' scientific subjects and into 'easy' courses in social studies and vocational education."

The pursuit of "hard" high school subjects, for which the student really has to think, has been side-tracked to a disturbing extent. The study of algebra, geometry, trigonometry, physics, and chemistry has steadily decreased in the past five decades, while there has been an increase in the proportion of students who sample general science or general mathematics, or who take social studies, vocational education, or "how-to-live" subjects. Half the high schools in the nation do not offer chemistry and 53 per cent offer no physics, reports the *Times*. At the salaries now being paid them, competent teachers in adequate numbers are simply not available. Students are apt to receive poor science training and not much stimulation to follow professions in science or engineering.

But even in the engineering colleges, the core of "hard" topics has been whittled at in the past decade to make room for social studies or general subjects. As compared to a decade ago, less — rather than more — mathematics is permissible in some courses; in other instances engineering topics such as surveying, descriptive geometry, and engineering drawing have been removed from the curriculum or made optional. The American Society for Engineering Education now recommends that 20 per cent of the time of engineering college students be devoted to

what the *Times* would call soft subjects, and which can, presumably, be passed without much effort.

While the soft educational policy — especially at the secondary school level — was being decried, attention was also called to the fact that each year 200,000 of the most gifted high school graduates do not enter college, and another 200,000 who do, never complete their college courses. The topic was emphasized by President Killian in his "Technology of Peace" address to Alumni (page 476) and on July 6, Benjamin Fine reported in the *New York Times* that "the United States is endangering its economy through a reckless waste of gifted students." Is there a correlation between "soft" courses and "reckless waste" of talent?

In the light of present international tensions and the technological nature of our way of life, the situation is ominous. Technology is becoming more complex and difficult, not less so; more is required of the student now, than in the past, to make him a truly contributing member of the engineering profession upon graduation from college. That those with a bachelor's degree no longer meet professional engineering demands immediately upon graduation may be inferred from the increasing numbers (and percentages) of students who go on to graduate work in science or engineering, and from the increased emphasis which industry itself places upon "on the job" training after a student has his engineering degree.

Modern life demands more hard mental effort of a quantitative type, such as that which engineers and scientists receive in their professional training, and less of that kind of thinking that can — and too often does — get away with "throwing the bull."

Studies in Nationalism

NATIONALISM is widely recognized as a major force for good or ill in contemporary politics. It is a force that can warp economic development, hamper communication among scientists, impair the rationality of political decision-making, and through its wars endanger the survival of civilization. Yet we know little of the origins of nationalistic attitudes, and of the sources of mass appeal of nationalistic movements.

A systematic study of nationalism is being carried on at M.I.T. by Karl W. Deutsch, Professor of History and Political Science, with the co-operation of student assistants. Soon to be ready for publication is a book manuscript, *Interdisciplinary Bibliography on Nationalism, 1935-1953*, comprising about 1500 titles from twelve major fields, and prepared with aid from the Institute for the Unity of Science and from the Technology Press. Following an earlier bibliography by Koppel S. Pinson, which appeared in 1935, this is the second bibliography in its field; it is the first that is broadly interdisciplinary, and that includes the field of the theory of communication. Thus far, work on the bibliography disclosed that social scientists, to a surprising extent have been unaware of each others' research in different fields bearing on problems of nationalism. The new bibliography, which is organized by fields of research, as well as by geographical areas, may help to alleviate this condition to some degree.

Visual Aids

MODERN science is taking another step forward toward the successful attainment of visual prosthesis for obstacle avoidance and detection of step-downs. The problem of devising, designing, building, and testing electromechanical aids for the blind has been under study at the Institute for a number of years.

Visual prosthesis for obstacle avoidance and for giving warnings of step-downs is being studied in the Research Laboratory for Electronics. The program is under the direction of Clifford M. Witcher, and is supported in part, by the Signal Corps; the Office of Scientific Research, Air Research and Development Command; and the Office of Naval Research.

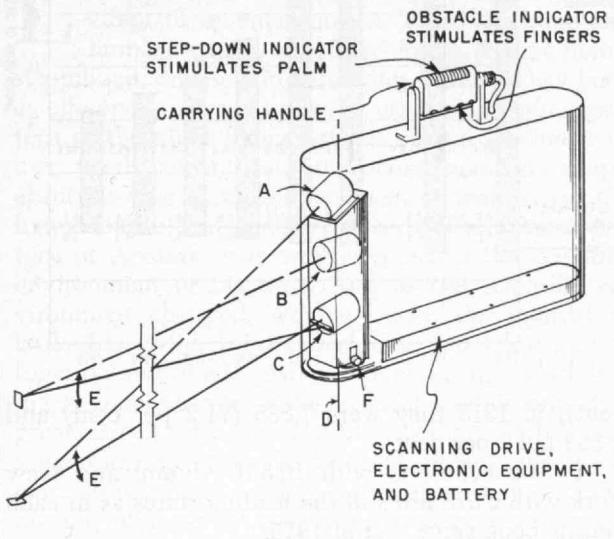
An improved model of step-down and obstacle detector, being built by Dr. Witcher and Lamar Washington, Jr., employs the basic principles of an earlier model in which radiation from a light source is projected into the path to be traversed. Reflected light, picked up by photocells, is used to actuate a signalling system, which conveys essential travel information to those using the aid. The new design represents a vast improvement over that tested a year ago, not alone in being much more sensitive and fool-proof, but also in the amount of information it can convey to the user. The new model is an improvement over earlier models in that it will also provide azimuthal data, in four steps, for angles as great as 30 degrees on either side of straight ahead.

A single light source is used to project two distinct beams several feet ahead of the user. A separate photocell and optical system is used to pick up reflected light from each of these beams. One light beam and photocell is used to give warning of stepdowns, whereas the other is used to detect obstacles.

The device will be contained in a small case similar to that of a portable typewriter or brief case. The optical system, including the light source with its Schmidt projector, and photocells with parabolic receiving mirrors, occupies one end of the case, which has openings for projected and received light beams. The required electronic circuits are built in a false bottom of the case, about an inch high. The major portion of the case may still be used, as any brief case, for books, papers, or similar articles. The light source, photocells, mechanical actuators, and electronic circuits are powered by a 1.5 volt, 10 ampere-hour silver storage cell, which will provide about 20 hours of continuous operation without recharging. A single 1.5 volt dry cell, such as is used in flashlights, can be carried in the brief case and will operate the equipment on an emergency basis for about one hour, should the storage battery become discharged unexpectedly.

The entire optical system is arranged to oscillate as a unit, with a period of 1 second, about a vertical axis to an amplitude of 30 degrees each side of the neutral or center position. In addition, the light source vibrates in a vertical plane at a rate of 160 oscillations per second. The light source produces two separate beams, as shown in the diagram. The main beam, used for step-down detection, produces a rectangular spot of light 2 x 6 inches in size, at a

- A STEP-DOWN DETECTOR WITH PbS PHOTOCELL AT FOCUS OF PARABOLIC MIRROR.
- B OBSTACLE DETECTOR WITH PHOTOCELL AND OPTICAL SYSTEM SAME AS FOR UNIT ABOVE.
- C OSCILLATING LIGHT SOURCE WITH SCHMIDT PROJECTOR SYSTEM.
- D ENTIRE OPTICAL SYSTEM PIVOTED ON VERTICAL AXIS.
- E LIGHT BEAMS SCANNING IN VERTICAL PLANE 160~SEC.
- F AZIMUTH COMMUTATOR.



Functional diagram showing the operating elements of electro-mechanical device for assuring safe mobility of foot travel for the blind.

distance of from five to nine feet ahead of the instrument. The prism projects a smaller rectangle of light more nearly horizontally, for obstacle detection.

The top photocell and optical system are arranged to pick up the signal for step-down detection and provide warning when the user is 6 to 8 feet from the step-down. The lower photocell picks up light reflected from obstacles at distances of from one to 10 feet.

The oscillation of the optical system (scanning) is achieved by means of a plunger type solenoid and crankshaft arrangement. An azimuth commutator at the base of the optical unit enables the operator to receive four sets of directional signals; 30 to 15 degrees to the right, 15 to 0 degrees to the right, 0 to 15 degrees to the left, and 15 to 30 degrees to the left. Signals from each of the four azimuthal commutator segments actuate obstacle stimulators or plungers in the handle of the device.

Warning of a step-down about seven feet in front of the operator is given by a vibration in the carrying handle and is conveyed to the operator through the palm of the hand, as the instrument is carried. The distance and general direction of an obstacle is given by vibrations of the finger stimulators. The general direction of any obstacle is indicated by that finger stimulator which is actuated. The distance of the obstacle is inversely proportional to the duration of the stimulator pulses.

The experimental unit marks an important step in the design of a simple and effective device to bring greater independence to the blind.

Blow Hot, Blow Cold

PUBLISHED writings on the subject of tooth decay — part science, part speculation, part polemics — constitute a literature that is vast, amorphous, controversial, and inconclusive. Does nutrition control the soundness of our teeth? If so, is nutrition a factor throughout life, or only during early years when tooth structure is largely established? Are variations in the bacterial flora of the mouths of different individuals the clue to differing rates of tooth decay? Is the answer increasing use of refined, rather than coarse, foods? Is it the frequency of meals?

One factor in tooth decay has been sufficiently clarified to find practical application. This is the intake of a suitable level of the element fluorine during early life, categorically demonstrated to inhibit tooth decay in many individuals. Such knowledge has led to the widespread practice of adding fluorides to municipal water supplies at a level to maintain one to two parts per million of fluorine. This practice is known to reduce tooth cavities in children by 40 to 60 per cent. But even here the polemics continue; fluoridation of water supplies is hotly contested (fortunately as a rule without success) by those who oppose compulsory public health measures on religious, political, or similar grounds, or who continue to theorize on the possibility of baleful effects, long ago disproved.

A novel note has just entered the study of modern dental ills, with the suggestion that tooth weakness may result from thermal shock, caused by taking into the mouth hot and cold foods or beverages in rapid alternation. Thus, iced drinks with temperatures near 32 degrees F. are common on summertime dining tables, and may be swallowed alternately with piping hot food having temperatures as high as 150 degrees F. Conversely, hot tea or coffee may be consumed alternately with frozen desserts.

A controlled study of such effects has been made using extracted healthy human teeth free of fillings. One hundred teeth were studied. Half were subjected to 72 thermal shocks, by shifting them between boiling water and ice water. This is manifestly more abuse than living human teeth are ever exposed to. The mouth will tolerate ice, but not boiling water. Also, pain responses protect against too violent alternations of extreme temperatures.

The other 50 teeth served as controls. They were immersed in boiling water for three-quarters of an hour, warming and cooling them slowly to avoid thermal shock. This heating was done to cancel out the effect of heat per se.

The two groups of teeth were then individually subjected to mechanical stress, by placing them on a hard concrete floor and dropping a flat-bottomed, six-pound lead block on them from a height of seven inches. Again, this is much rougher treatment than teeth in a human mouth usually undergo.

Of the 50 teeth exposed to thermal shock, 21 broke; only 11 of the 50 control teeth broke. These results are at best presumptive because of the harsh conditions of the test. Nevertheless, the study indicates that thermal shock deserves further study as a possible element in modern tooth weakness.

Book of the Tenth Census

MORE than 6,300 freshly buckram-bound copies of the new 1955 *Alumni Register* went into the June mails in fulfillment of orders placed by "advance subscribers;" and a limited supply of additional copies paper-bound for post-publication sales at \$6.00 per copy postpaid is now on hand at the Alumni Office, Room 1-280, M.I.T.

The 1955 *Register* is the 10th edition since 1909 of this periodically published "census book" of Institute Alumni, Corporation, Faculty, and Staff; and compressed in its 642 text-pages are alphabetical listings of: 47,210 living Alumni; 11,968 deceased Alumni; members of the Corporation since 1862; 9,119 members of the Faculty and Staff since 1865; 196 officers and Executive Committee members of the Alumni Association since 1875; the 54 Honorary Members of the Association elected since 1900; and the five Honorary Members of the Alumni Council elected since 1917.

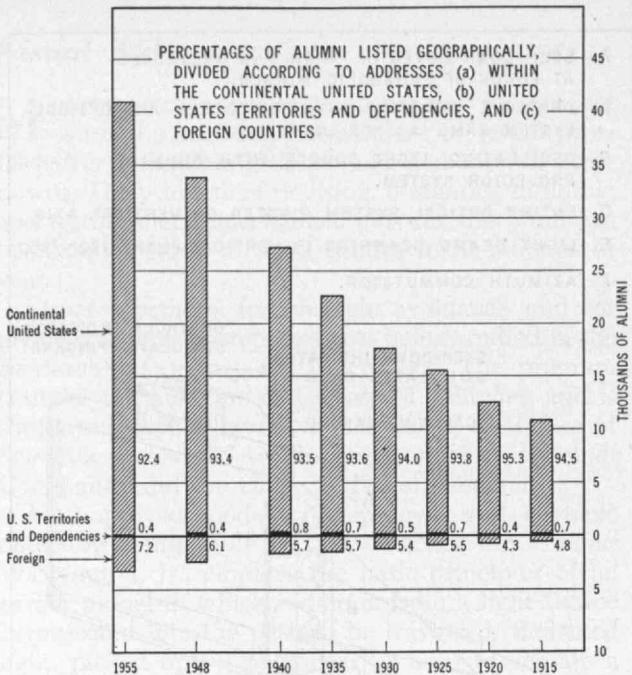
All Alumni, living and deceased, are cross-indexed according to class affiliation; and 44,274 Alumni (94 per cent of those living) are cross-indexed geographically according to their addresses as corrected to February 15, 1955.

As shown in the adjacent chart and table reproduced from the Register, the total alumni body of 1955 — numbering 59,178 persons — is 1.5 times greater than in 1940 just before World War II, and four times greater than when the 1915 Register was issued on the eve of the Institute's removal from Boston to Cambridge. To make the new 1955 *Register* of further value to readers interested in population trends, a "Statistical Summaries" section, including tabulations of comparative data obtained from listings in each of the eight editions published over the 40-year period 1915–1955, has been compiled. Illustrative examples gleaned at random from these tabulations show that:

(1) Average annual rates of increase during the seven years since the 1948 *Register* appeared have been 837 (2.0 per cent) in living Alumni, 514 (6.2 per cent) in deceased Alumni, and 1,365 (2.8 per cent) in the total alumni body; and during the 40 years since the 1915 *Register* they have been, respectively 835 (6.0 per cent), 272 (2.8 per cent), and 1,110 (7.5 per cent).

(2) In 1955, of the 44,274 Alumni indexed geographically, 40,899 (92.4 per cent) are in the United States and 3,182 (7.2 per cent) are in foreign countries, the remaining 193 (0.4 per cent) being in United States territories and dependencies.

(3) In 1948 the corresponding figures were, respectively, 21,901 (65.0 per cent) and 4,447 (13.2 per



cent); in 1915 they were 7,835 (71.2 per cent) and 1,383 (12.6 per cent).

(4) Massachusetts with 10,551 Alumni and New York with 6,575 are still the leading states as in each census book since that of 1915.

(5) In the past seven years California has been gaining at an annual average of 119 (6.3 per cent). Hence, California is now third with 2,729 (6.7 per cent of the U. S. total).

(6) Pennsylvania in 1955 is fourth with 2,312 (5.7 per cent of the U. S. total); New Jersey is fifth with 2,294 (5.6 per cent).

(7) In 1955, Texas for the first time ranks within the "top ten," as tenth with 875, or 2.1 per cent of the U. S. total.

(8) Although South Dakota has doubled alumni-wise since 1948, from 8 to 16, it still ranks last on the 1955 roster of states.

(9) Of the 3,182 Alumni now living in foreign countries, 717 (22.5 per cent) are in North America, 704 (22.1 per cent) in Europe, and 510 (16.1 per cent) in South America.

(10) Canada continues to occupy first position among foreign countries with 550 Alumni.

(11) Mexico is now next to Canada with 167 (5.2 per cent of the foreign total); India is third with 149 (4.7 per cent).

(12) Venezuela's rise to sixth position among the "top ten" foreign countries has been spectacular since 1925 when its single Alumnus placed it 43d on the list.

FORTY YEAR GROWTH OF THE ALUMNI BODY: 1915–1955

1955	1948	1940	1935	1930	1925	1920	1915
59,178	49,620	38,525	33,903	28,643	24,802	18,046	14,788
11,968	8,272	6,026	4,435	3,236	2,128	1,262	984
47,210	41,348	32,499	29,468	25,407	22,674	16,784	13,804
2,936	5,223	3,581	5,128	6,483	5,873	3,451	2,196
44,274	Listed Geographically.....	36,125	28,918	24,340	18,924	16,801	13,333
							11,608

Impact of Atomic Energy on The Life Sciences

By SHIELDS WARREN

LIVING matter is distinguished by its ability to adapt to its environment. Thus, the huge and limbless whale, well fitted for its pelagic home, streamlined, encased in insulating blubber, has been as effectively altered from the basic mammalian pattern as the night flying bat has changed to meet its own needs, substituting wings for legs. This adaptability is true of the life sciences as well as for the living matter that is their concern. The natural history of Aristotle was well adapted to the scientific environment of his time. And as the scientific environment changed, we have seen the interest of biologists swing from description and taxonomy to function and biochemistry. Atomic energy is producing a great change in the scientific environment, a great impetus to the scientific method. It has had a fivefold impact on the fields of biology and medicine. However, it has not forced uprooting and displacing of mass of knowledge developed within the past 4,000 years.

First and perhaps most important, the advent of atomic energy has required the biologist and the doctor to understand somewhat more the other natural sciences and to take them into account in his work. He can no longer afford to ignore the chemist, the physicist, the engineer. Second, by the provision of new tools that permit exact localization of the biologic processes in terms of space and time, it has provided enormous impetus to quantitative biology and to an understanding of the complex processes of intermediary metabolism. Third, atomic energy has greatly extended the types of radiation therapy available to the physician. Fourth, since ionizing radiation is no longer cooped in the hospital radium vault or X-ray room, the coming of atomic energy has greatly stimulated studies of radiation injury, its nature, prevention and treatment. Fifth and finally, it has stimulated a tremendous interest in genetics because of the profound effect of radiation upon germinal epithelium. Not only has atomic energy provided easy ways of bringing about genetic variations of value to agriculture but it has awakened man to a clearer understanding of the importance of his germ plasm, our basic heritage.

Work is done, progress is made at interfaces and this is true at the interfaces of scientific disciplines. I still remember vividly from my class in medical school the way in which the few graduates of M.I.T. in that class that had drifted into the less exacting field of medicine stood out through their ability to deal with phenomena of physics and chemistry into which they had already gained some insight. The need for radiation protection, for Geiger counters, for scintillation counters, for radioautographs have brought together the physicist sympathetic to biology and the biologist who needs modern tools in his

work. Whereas the mathematics of the doctor in the past have largely been confined to being sure that the appropriate number of minims or guttae did not too obviously over- or under-fill the standard prescription bottle; now he needs to calculate dosages of radioisotopes with a fair degree of precision, juggling half lives, ergs per gram of tissue, relative biologic efficiency of different types of radiation, before he can prescribe accurately an isotopic dose.

Perhaps the greatest revolution that atomic energy has yet brought about is that in the field of understanding the metabolic processes of the body. In the past the biochemist could measure the size and weight of the body, the material taken into it and the material given off from it, but what went on within this Pandora's box — the human body — was the subject of conjecture, hypothesis and argument.

A revolution in our thinking was begun by Schoenheimer's work with a limited number of expensive stable isotopes. This has been consolidated by a tremendous volume of effort made possible with the ready availability of easily measured radioactive isotopes of most of the biologically important elements. The dynamic equilibrium of the body and its constituents has been demonstrated with a completeness inconceivable to the pioneers who first advanced this theory. While charting the interchange of atoms between biological substances, experimenters have also learned to use the radioactive substances as extremely sensitive means for detecting and measuring the individual biochemical reactions. With radioactive labelling, and particularly when combined with separation methods like chromatography, substances could be found which existed only transitorily or in vanishingly small amounts. The recognition of the new and entirely unsuspected 7-carbon sugar, seduheptulose, as an intermediate in both photosynthetic reactions in plants and the oxidation of glucose in animals is only one example of many such findings. In this way many gaps have been filled in our knowledge of the metabolic pathways and of the interrelationships between carbohydrates, fats, proteins and other substances. Completely new reactions have also been found, which were previously undetectable by the usual methods. The enzymatic synthesis of glutathione was at first detectable only by the use of labeled substrates, and from this beginning the enzymes were eventually isolated by Bloch to give us the first set of reactions synthesizing a natural peptide. Work is now well begun on systems synthesizing whole proteins, and even though as yet no net synthesis of a protein may occur in the system, the fact of synthesis is demonstrable by the incorporation of an isotopically labeled building stone.

Of even greater interest to the biologist than the mere sensitivity and simplicity of isotopic methods

is the fact that the use of such methods is almost unnoticed by the cell. It is no longer necessary to experiment under unnatural conditions which will allow an intermediate to accumulate and be measured. The reactions going on in undisturbed cells, the synthesis of compounds in the midst of their equally rapid breakdown, can now be measured. So too can the localization of particular compounds in the cell be pinpointed by autoradiography. Work of this sort permits us at last to test the relevance of the many bits of metabolic information we have already gained for its validity in the whole, living cell or organism.

The stimulus provided by atomic energy to nuclear physics has been a great boon to radiation therapy. Several of the radioisotopes have already proved their value as internal emitters, notably P_{32} , I_{131} and Au_{198} . Radiocobalt has largely replaced radium, and by its greater specific activity has made it possible to have much more powerful sources than could have been obtained from radium alone. Supervoltage radiation, although not directly concerned with atomic energy, has been tremendously advanced as a result of the stimulus to the field of nuclear physics. Neutron beams from cyclotrons or reactors have been utilized to a limited degree for the treatment of certain types of cancer, notably brain tumor, and the effect has been enhanced by the administration of localizing substances such as some of the boron compounds that enhance neutron capture by the tissues.

Radiation injury, long of esoteric interest (my own had been aroused some 30 years ago by the changes seen in the hands of the pioneer X-ray workers) has become a concern not only of the physician but of the reactor engineer, the experimentalist using radiation source in his laboratory or the military man concerned with determining kill radii or means of protection of his own personnel. Fortunately, very active research is going on in looking toward better knowledge of the mechanisms involved in cell injury, which incidentally will be of very real value

The recently dedicated Kresge Auditorium, in which the conference on the "Uses and Economics of the Peaceful Atom" was held on the morning of June 13.



in the radiation therapy of cancer, and in the finding of remedies for radiation injury in its acute and severe forms. Through experiment and experience increased information is being gained as to permissible doses of radiation. In the meantime the work of the biophysicists, radiochemists and engineers has given us much information as to how to live safely with radiation and how to handle dangerous amounts of material. In the refining and use of somewhat under a pound of radium accumulated in the world for medical purposes prior to World War II approximately 1000 people were involved and 10 per cent of them died or suffered serious injury as a result of the radiation that they received. In the atomic energy industry on the other hand which handles radioactivity equivalent to thousands of tons of radium and with hundreds of thousands of man years of experience, there have been only two deaths from radiation and barely a score of injuries from radiation.

The global distribution of the fallout from atomic explosions and the drama of the rain of radioactive ash on the Japanese fishing boat together with the availability of very delicate instruments for the detection of radiation have brought the problem of chronic radiation effects to the forefront. Fortunately, the global levels of radiation have been such as to be of no significance to health.

Radiation has proved to be a very powerful means for the production of genetic mutations. Observations on plants, animals and man and controlled experiments in animals and plants demonstrate clearly that at any time a spontaneous genetic mutation can occur. Most of these mutations tend to act unfavorably on the function or development of the individual produced. These spontaneously mutated genes, largely recessive, have accumulated over the ages in appreciable numbers in all populations — plant, animals and man. The presence of these mutated genes in the germ plasm accounts for a considerable number of the stillbirths and congenital malformations encountered in the human population. The mutations due to radiation are predominantly detrimental, although in agriculture careful selection of mutated varieties of plants has made it possible to produce improved crops. Since the effects of radiation on germ plasm are cumulative, it is inevitable that any increase in the background radiation such as the slight increase produced in some regions by fallout from atomic weapons tests as well as from the industrial uses of atomic energy will result in additional mutations in human genes. However, only a small number of these mutated genes will produce any noticeable effect even in the first generation. Only as centuries of the atomic age pass will most of these radiation mutated genes produce change and then usually will bring about some minor or possibly major impairment of development or function in the individual concerned. Because many such individuals who have already become carriers of mutated genes in the population as a result of the accumulation of mutated genes over the period of development of man, it will be impossible to recognize the persons added as a radiation effect.

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Impact of Atomic Energy on Our Economy and Way of Life

By T. KEITH GLENNAN

THE topic assigned to me is a formidable one indeed. Perhaps by reducing the problem to bare fundamentals, however, we can examine its various parts briefly and then develop a rational and useful picture of the probable effects of increasing use of nuclear energy on our social and economic organization. In discussing this as a method of approach with a colleague a few days ago I was the recipient of this sage advice — "If Einstein could reduce the fundamental relationships of energy and matter to the simple formula — E equals MC^2 , there is hope that you can cover, in a matter of 30 minutes and in broad outline only, the impact of atomic energy on our economy and way of life." Thus challenged — and with the help of my crystal ball and, perhaps, some measure of common sense — it seemed to me that I might best serve your interests by discussing the peaceful atom in terms of present industrial activity, in terms of present governmental activity, and in terms of the important problems that may impede progress toward the ultimate goal of useful and widespread exploitation of the nuclear field. Finally, with your indulgence, I'll try to look ahead a bit and try to suggest the possible course of events for the future.

If we are going to look at the economy as it may be affected by industrial and governmental interest in the atom we can most easily approach the subject by speaking in terms of "bulls" and "bears." The economy either expands or it contracts. Business tends to boom or to bust. There is either prosperity or depression or as we have come to view it in these latter days — recession. Seldom does one find the economy static. Perhaps its most dominant characteristic is that — as J. P. Morgan once said of the stock market — "it will fluctuate." Where does the industrial atom fit into this picture? So far as one can see it is on the bullish side, some would say strongly so. Measured against the situation existing two years ago when the activity was essentially zero even a conservative minded person would have to say that there is optimism in the air. Caution, born of ignorance growing out of a tight security program, is being swept aside by aggressive, competitive risk-taking born of the 1954 change in the Atomic Energy Law and the optimism supported by faith in the ability of the engineer to solve the technological problems which remain as the principal obstacles to economical use of the atom.

The evidences of this bullish tendency on the part of industry are becoming impressive. This audience is made up of people of affairs who must keep abreast of important developments in the industrial and political world. There is no need here for me to do more than list the more important actions taken by industry to further competitive non-governmental

involvement in the burgeoning atomic energy business. Such a list would include the announcement of the building of a 236,000 kw 55 million dollar atomic power plant by Consolidated Edison of New York using private funds and with Babcock and Wilcox as the prime contractors; the submission to the A.E.C. of proposals for the building of atomic power plants by four utility groups — three privately financed and one public power district — with governmental participation estimated to amount to 10 per cent to 20 per cent of the total cost and restricted to the research and development phases of the projects; the privately financed \$6.5 million materials testing reactor to be built by Westinghouse; American Machine and Foundry's \$1.5 million research reactor; plant additions now under way by Babcock and Wilcox and Combustion Engineering for the sole purpose of building reactor components and equipment; and Standard Oil Development's construction of a laboratory for research in nuclear science. North Carolina State, Penn State, the University of Michigan, Batelle and Armour Institutes and your own great M.I.T. are building or will build research reactors using funds provided by industry and individuals. Perhaps one of the most interesting instances of enterprise is that of the offer made by both Foster-Wheeler and by Babcock and Wilcox to design and build large scale nuclear power plants at a guaranteed cost per kilowatt that exhibits substantial faith in the future of the atom business.

Now, one of the really significant facts to be kept in mind is that the power proposals made to date are based on as many different reactor concepts as there are proposals. And yet each is backed largely, indeed, in most instances, wholly by private capital. Since none of these units is expected to be economically competitive with the average conventional thermal plants, it is apparent that competitive industry is using risk capital to speed the technological improvements necessary to the rapid development of a truly competitive nuclear power industry. Could there be a more solid example of optimism and bullish activity?

But there is additional evidence of confidence being displayed by the American industrial community. The Atomic Industrial Forum is an organization of about 300 industrial concerns and research institutions. It is devoted to fostering the development of atomic energy for peaceful purposes. In April of 1954, the Forum with the co-operation of the Atomic Energy Commission, undertook to survey the plans of American industry in the atomic energy field over the course of the next 10 years. Some 400 companies representing about 75 per cent of the dollar volume of the present atomic energy industry were surveyed. Here is a brief of the significant findings

of the survey: 1) Industrial organizations and privately financed institutions in the U.S. plan to spend \$300 million of their own money during the next four years in atomic energy research and development including capital facilities. 2) By 1963 the manufacture of components will probably be a business grossing \$700 million per year. 3) By 1965, it is estimated that between 3 and 7.5 billion dollars will have been invested in the U.S. in reactor construction. That is a wide spread to be sure, but even the lower estimate represents a substantial plant investment. About half of this volume is expected to be represented by propulsion reactors. 4) By 1965 reactor operation may call for an annual consumption of 8,000 metric tons of natural uranium and a possible total of 26 tons of U-235. 5) Also by 1965 atomic energy developments, both government and industrial will call for a total of 30,000 to 40,000 scientists and engineers, or about double the number in both categories today. 6) Large reactor power plants will become economically competitive between 1962 and 1965.

On May 23 and 24 the Forum held a members meeting in New York to discuss the meaning of the findings of the survey. Typical comments heard in the halls and reported in the Wall Street Journal included this one by Carroll Wilson, Vice-president of Metals and Controls Corporation of Attleboro, Mass. — "there will be large risks and commitments, but the stakes are big." By R. C. Freeman of General Electric — "we're in this business for the long pull." And by Leonard Cronkhite, President of Atomic Instruments Company, as he said, "you've got to stay at the head of the parade, constantly developing new products and seeking new markets." No sign of pessimism here, is there?

The government, too, is not without an attitude of bullishness toward the future of peaceful use of the atom. It was this confidence, prodded somewhat by industry and the Congress, that was the major reason for the \$200 million five-year reactor development program launched by the Atomic Energy Commission last year. The purpose of this program

is to push five different types of power producing reactors through the successive phases of research, development and successful operation. Add to this the submarine and large ship propulsion units, the aircraft propulsion program, and the package power units for the Army and you have a substantial undergirding of the industrial program by continued governmental research and development and prototype construction of a variety of types of power reactors. And the government is committed to a continuation of this support although it will diminish with time.

At this point let me say that, personally, I take great satisfaction in the present state of affairs. During and immediately following my term as a member of the A.E.C., I urged upon industry an aggressive interest in atomic energy. Money talks — usually — and the expenditure of money by the early study teams and impressive technological progress made within the Commission laboratories combined with other and important factors to convince the Congress and the Commission that the time had come for a new look at the basic atomic energy law. It was not always that way! As recently as the spring of 1952, I can remember a member of the House Appropriations Committee demanding that he be assured that the A.E.C.'s budget contained no money for industrial atomic developments! How the atmosphere has changed in three short years!

All this activity is obviously based on an optimistic view of the future of atomic energy. The optimism is strong and widespread. Even the government, which is not usually inclined to prognosticate, has talked in terms of from two to ten per cent of the total electrical output in the U.S. being produced from atomic fuels by the year 1975. This could mean as much as 40 million kw of installed capacity — an amount equal to 40 per cent of the total installed capacity in this country in 1954. It is almost fair to say, that currently it is fashionable today to be optimistic. As a matter of fact, much of our foreign policy today is based on the optimistic assumption that the atom is really going to amount to something. For example: there is the entire atoms-for-peace program, with its Geneva Conference, its atomic-powered peace ship, its bilateral agreements with our friends overseas, and its plans to set up an International Atomic Energy Agency. Today's optimism is reflected in the stock market, where the shares of companies with publicized atomic energy activities sometimes jump as much as 15 points and more in 48 hours on the basis of announcements and even rumors of mergers, contracts and plans.

In the light of all this, it would be very easy to stand here today and say atomic energy will have an enormous impact on our economy and way of life. One could speak of economic power, of package power plants changing the face of the land and the lives of people in remote regions of the world, of a new chemical industry built on the use of radiation, of a new food industry built on radiation sterilization techniques, and of a myriad other beneficial applications ranging from the mastery by man of the photosynthetic process to the elimination of disease. The problem, however, is to find where in this welter of

President James R. Killian, Jr., '26, of M.I.T., President T. Keith Glennan of Case School of Technology, and President Richard S. Morse '33, of National Research Corporation.



dreams reality lies. Is the current optimism just a passing fad, founded on hopes and nurtured on publicity, or is it something more substantial? Is it based on a realistic and hard-headed evaluation of the known technological and economic probabilities?

Before going on, I think I should make clear my own position. I think it would be fair to say that in regard to atomic energy I am an optimist. But I am what I like to think of as a realistic bull, or a bull whose optimism is tempered by a real respect for the enormous problems ahead. Another way of putting it would be to say that I believe more in what I would call the atomic evolution than I do in the atomic revolution. So in the hope that I have made clear my own sincere belief in the future of atomic energy, let me — to keep the record straight — list just some of the obstacles that must be overcome by hard work and much imagination before we can honestly hope to arrive in the promised land.

Let's begin with uranium — the raw ore. Here is one place where the optimists of the past have already been proved right. There is more commercial grade uranium known to exist today than almost anyone believed possible 10 years ago. In passing, let me pay tribute to Jesse Johnson, Director of Raw Materials of the A.E.C. and to Commissioner Thomas E. Murray whose optimism and stubborn pursuit of increased supplies of uranium must be acknowledged as one of the major contributions to the health of our great atomic program today. The uranium mining industry in the U.S. virtually non-existent following the war, is now a \$100 million a year industry. It is of the same order of magnitude in Canada. Enormous quantities of uranium are now being extracted from gold residues in South Africa. The rich Shinkolobwe mine in the Belgian Congo continues to produce. Important deposits are being found in Australia and elsewhere.

But much of the exploration that led to these discoveries, and nearly all of the major production of the world, can be attributed not to any normal, peaceful, civilian industry, but to the fact that there has been an almost insatiable weapons market for uranium. Prices have been guaranteed, liberal bonuses and allowances have been paid. The guaranteed minimum price in the United States expires in 1962. One problem ahead is what happens after 1962. Even the optimists have questioned whether the civilian industry will be able to absorb uranium at the present rate of world production until after 1980. Should the government continue its guaranteed prices? Really, there should be only one reason for doing this and that is the weapons program. But who can say for sure what the weapons market will require? Even if the military services thought they knew today what they would need in 1962 and beyond, how can they be sure in a situation fraught with such unknowns as the results of international political maneuvers, technological break throughs, and the opinions of yet-to-be-appointed-or-elected public officials? And the mining industry will need to know what governmental policies on ore procurement are to be — long before 1962. This is indeed a difficult problem that can be resolved only within the A.E.C.

The real problem here is the development of a price guarantee and buying schedule to be effective after 1962 that will tide the uranium mining industry over until the power and propulsion demand can replace the military demand that has formed the basis of the industry in the past. There are other problems — among them ore processing, feed materials processing, full fabrications, materials development, fuel reprocessing and waste disposal. Listen to Glenn Seaborg speaking at the Forum-Stanford Research Institute meeting in April in San Francisco: "In my opinion a limit to the extent to which atomic power can be used in the future will be set by the ultimate solution to the waste disposal problem, and here, it seems to me, the path for the ideal solution must lie outside of any ideas presently contemplated." These are the tough and, in some cases, nasty jobs that are just as important, in their own way, as the actual nuclear reaction itself so far as the economic production of heat power and radiation is concerned. There are other problems too, not all technological. For example, there is the problem of insurance. The potential hazards of atomic energy are enormous. No one expects a reactor to have a catastrophic accident, but owners and operators want to be covered if it does. But no insurance company will write, as yet, the policies involved.

In summary, it seems clearly evident that determined attempts are being made to industrialize the atom within the framework and using the methods of our traditional competitive enterprise system. What I have done thus far in this discussion is to bring together elements of the atomic picture that should be known to all who will pause and will read. I have tried to paint a sort of unfinished picture with these elements — unfinished because of the problems that remain to be solved — unfinished because of the international political scene which continues to make the explosive potential of the fission and fusion process still the paramount objective of our national atomic energy program. There is no question but that we are embarked on an imaginative journey to new horizons but patience, diligence, courage and constructive planning will be needed in full measure if we are to achieve the great goals envisioned by President Eisenhower and our statesmen — goals of peaceful progress for all peoples through the gateways opened by the split atom.

In some ways I think I have strayed a bit from my topic. I have told you about the state of the economy as it relates to the development of an atomic energy industry. I have not ventured to say much about the impact of atomic energy on our total economy and our way of life. But I will try now, as I conclude, to suggest some thoughts on the more philosophical aspects of this subject.

Our way of life once included an almost automatic response to threats of violence to the person or property of an American citizen. Today, because of the involvement of civilian populations in modern wars and because of the destructive powers of the atomic and hydrogen bombs, we try to find peaceful solutions to such problems. National tempers are less prone to flare at the slightest provocation than was

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A Report on M.I.T. Progress Emphasizes The Technology of Peace

By JAMES R. KILLIAN, JR.

MY ASSIGNMENT today is to give you a brief report on recent and impending changes at M.I.T. and to relate these local developments to their national or international setting. I also wish to give special emphasis to the ways in which this institution is sharing in the great responsibility for mobilizing science and education to further the peaceful objectives and augment the strength of the free world. I thus pitch my remarks in the same key as this morning's impressive symposium.

Last month we announced that the Corporation had voted unanimously to raise the tuition at M.I.T. from \$900 to \$1100 per academic year, effective with the opening of the summer session in 1956. This decision was reached reluctantly but with a deep conviction first, that it was an essential move to assure M.I.T.'s independence and strength and, second, that it was also in accord with a growing national attitude that the privately controlled institutions must meet their financial problems squarely and creatively.

The private institutions must not deny themselves the remedies available to other organizations in our society in a period of rising costs and high taxes. They must reject and replace the sorry subsidy of balancing their budgets by underpaying their faculties. They must aggressively seek increased gifts and grants from a greater number of sources and at the same time improve their budgets by removing the deadwood from their curricula and the dead hand of archaic methods from their management. If they are to continue to be pacemakers and standard-bearers of higher education, they must expect to help themselves and thus justify help from others. These are the conditions of survival and the requirements of leadership. To meet them, the private colleges must revise obsolete financial policies. They must ask parents who are able to pay a higher portion of the costs of their young people's education and at the same time increase institutional assistance for students who need help. They must move in the direction of asking those who can to pay and those who can't to be generously helped. Too many young people of ample means are being subsidized in college, while too many of limited means are being inadequately helped. This condition arises for two reasons: (1) a tuition policy that does not adequately take into consideration the ability to pay and (2) a scholarship policy that gives aid to those who do not need it.

The misuse of scholarship funds for the purpose of recruiting talented young men and women, without due regard to their needs for financial aid remains a powerful factor in continuing to promote confusion in the minds of the public as to the true purpose of scholarship assistance and the high purposes of edu-

cation. It is encouraging that this year almost 100 colleges and universities have joined in a common program aimed at a solution of this problem. It is highly necessary that everyone, including Alumni, parents, and secondary school people understand that financial assistance from colleges is related to need as well as scholarship. Prizes and other forms of recognition for intellectual achievement are important, but under present conditions, scholarships must be limited to those able students who need financial aid to go to college. These views in regard to the financial policies of private colleges have motivated M.I.T. in increasing both tuition and scholarships beginning in 1956. Even after the increase, the tuition paid by M.I.T. students will cover less than half the cost of their education.

When the new tuition goes into effect, we expect to extend scholarship aid to more students at M.I.T. and to increase the average award per student as well. While further gifts are urgently needed to provide scholarships, it is indeed encouraging to have the increase in scholarships at the Institute coming from industry and from personal gifts and bequests. These scholarship funds, augmented by additions from unrestricted funds, will make available an increase of better than 50 per cent in the funds for undergraduate scholarships in contrast to the 22 per cent increase in tuition.

Along with an increase in tuition and student aid, we seek an increase in gifts and grants. Under the direction of Alfred P. Sloan, Jr., '95, Marshall B. Dalton, '15, and Robert M. Kimball, '33, Secretary of the Institute, we have a large campaign for the Compton Memorial Laboratories under way. In addition, we are moving to extend the annual giving concept of the Alumni Fund to other groups. We are maintaining at a very gratifying level the Industrial Liaison Program of corporation grants. We are conducting a bequest program. In every possible way, we are seeking to broaden the base of the Institute's support. This year, for example, our gifts and grants will come from 31 foundations, 170 companies, and 12,000 individuals and other givers. Thus we average over a thousand gifts a month, small as the average gift may be. From this great variety of sources M.I.T. will receive during the current fiscal year approximately six million dollars, compared to the five million received last year.

This total we announce with gratitude and gladness, but our report would not be complete without a footnote to remind us that the dollar "ain't what she used to be." What was a million dollars 20 or even 10 years ago represents in purchasing power only about a half-million dollars today. We also need to note that M.I.T., in response to the national need,

has increased its student body from 3,100 to over 5,000 students since the war, with a proportional increase in the size of its physical facilities, and the need for a proportional increase, measured in constant-value dollars, in its endowment, which it has not yet achieved. I call attention to these facts to point out why, in terms of present-day dollars, we must increase both tuition and gifts.

And now let me report specifically on the special effort to raise seven million dollars to build a nuclear reactor and a physical sciences building to aid vital programs of basic research and teaching and to stand as a fitting memorial to Karl Compton. It is especially appropriate that we memorialize Karl Compton this way because he felt these facilities to be urgent needs, and they will further those fields he was interested in as a scientist. With over four million dollars pledged or given, we hope shortly to come close enough to our goal to start construction of the physical sciences building and sometime during the next academic year on the reactor. Both of these facilities will serve to augment the Institute's facilities for pure science and basic research and are thus in accord with the growing national conviction that basic science and basic research need greater emphasis and support. The reactor will also provide us the necessary laboratory for training the new breed of engineer required by industry to exploit the peaceful atom.

Because of the special interest it commands, and in the light of the morning's conference, let me give some details about our reactor. It will have nothing to do with bombs. It will be non-secret and dedicated to the unrestricted advancement of knowledge and the peaceful use of the atom. It will be a domesticated kind of reactor for campus use. We have investigated the types of reactors whose performance has been demonstrated in A.E.C. laboratories and have decided that one generally similar to the CP-5 reactor of the Argonne National Laboratory best satisfies our requirements with respect to safety, usefulness, and cost. It is generally agreed that such a reactor is one of the safest known. It will be housed in a gas-tight steel building. It will be operated to produce heat at the rate of 1000 kilowatts. At this power level it will produce a flux of thermal neutrons as high as any other university reactor in the United States. It will be operated at temperatures under 50 degrees Centigrade, and is not intended to produce useful power.

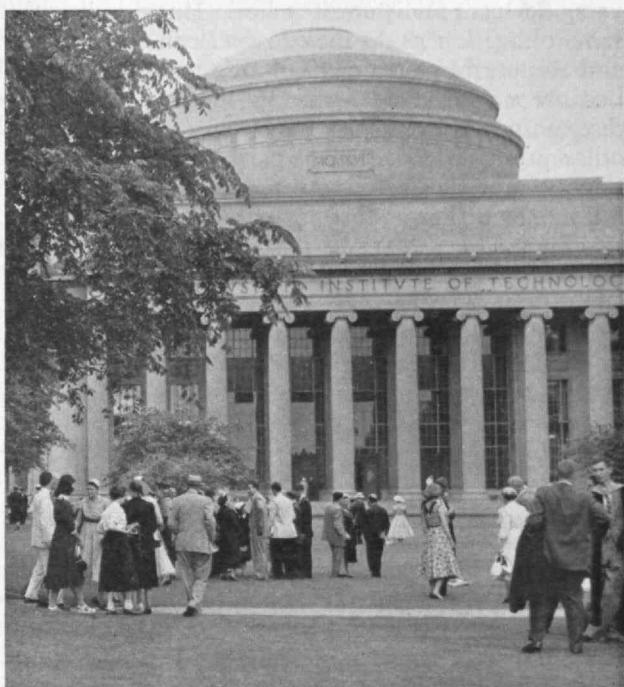
Our preliminary plans have been reviewed by the A.E.C.'s Advisory Committee on Reactor Safeguards, which has agreed that our proposal to build a reactor of this type and power level for campus use is reasonable. We are now completing detailed specifications and will submit them to the Committee for formal approval in the late summer.

This reactor will be an integral part of our educational program for students of nuclear engineering. It will be used in a great variety of research programs, including studies of the solid state by means of neutron diffraction, reactor development

studies, production of radioactive isotopes, activation of engineering test materials, catalysis of chemical reactions by radiation, sterilization of food and pharmaceutical products by radiation, acceleration of biological mutations, and cancer radiation therapy. Through the agency of this reactor, M.I.T. expects to make substantial contributions to the beneficent uses of atomic energy. It expects thus to take its share of the responsibility for keeping the United States in the lead in realizing the immense potential of atomic energy to improve the health, welfare, and prosperity of mankind. Our educational program in nuclear engineering is evidence of our policy to move into important new fields of technology, as opportunities and needs open up.

While all that I have said so far has a bearing on the quality and vigor of our educational program, let me now turn to a specific example of an important educational experiment which reflects our search for new patterns. This is what we call the double major, or Course XXI, a new undergraduate course of study which has been unanimously approved by the Faculty and for which the Rockefeller Foundation has just made a grant of \$300,000 to aid us in getting it under way.

This course is precedent-setting for the Institute since it is a program in general education — a course polarized about science or engineering, but still general in aim and scope. About 40 per cent of the four years will be devoted to the humanities and social sciences — about twice as much as now provided for in any existing Institute program — the remaining work, of course, being in the fields of science, engineering, or management. This course will lead to a bachelor's degree without specification, but it is so designed, and this is a very important aspect, that a student can come for a fifth year and obtain a degree with specification in any one of our professional courses. This new curriculum promises to have many important values for the Institute. It will serve to give our School of Humanities and Social Studies a



The dome of Building 10 dominates the Great Court as Alumni return to hear President Killian's report on the state of M.I.T.

course of its own and thus to give the teachers in this school more of a professional stake in our total educational assignment. It will help to attract to the Institute, we hope, more of the type of youngster who wishes a professional education coming as a sequel to a general education or who has a bent for human relations and the art of leadership. It may well serve to set a new pattern in American engineering education, and I believe this pattern to be a better one than a continuous five-year program leading to a professional degree. Finally, the program reflects the responsibility accepted by this institution of laying great stress upon a broad general base for the education of scientists and engineers.

At this juncture in our national life, we have urgent need for more scientists and engineers, more Compton's and Bushes and Conants, who can build bridges of understanding between the domain of science and the domain of non-science. We need scientists and engineers who are deeply conscious of the issues and values in our society and who can, as a result, be influential leaders in the political and public life of the nation. We believe that education can help to motivate and prepare more engineers and scientists for this kind of public service and broad outlook. We in the field of science and engineering education have a special need today to consider the position of the scientist and engineer in relation to public policy. There is some inclination to consider the scientist as so much of a specialist that he has no qualifications for speaking up on public policy. Scientists have been attacked for speaking up on public policy simply because they were scientists. There is almost a hazard that the scientific and technological specialist will be muted as a voice in our public councils.

In an age of science and technology this is doubly unfortunate. Public policy needs to have from science an understanding of how science affects policy. And the scientist should have the same prerogative, no more, no less, than other professional men, lawyers, doctors, ministers, teachers. He also has the same obligation as do they to speak in an informed and responsible manner on public matters. But just because a man is a scientist or engineer should not disqualify him from speaking on an equal basis with other professional men in regard to the great questions of our day. The very nature of many of the questions, arising as they do out of the activities of scientists and engineers, makes it imperative that the scientist and engineer speak as citizens on an equal footing with citizens of comparable education from other walks of life. It is vital that they be able to speak out of their knowledge as scientists on the meaning of science to our society. This is important if we are to maintain a favorable environment for technological advance and if the nation is to deal wisely with the great technological forces of our time. Of course, this condition I describe has the same roots as those security and loyalty policies which have been so inimical to science and to freedom of thought. It is to be hoped that the pendulum has begun to swing the other way, now that the Supreme Court has given it a nudge, however slight, in the right direction.

Shortly after receiving the Rockefeller grant for new teaching programs in the social sciences and humanities, we received another substantial grant in a related field and which illustrates our progress in building into an institute of technology one of the best liberal arts groups in the nation. The Carnegie Corporation has authorized \$150,000 to enable our Center for International Studies to undertake a three-year study on American Society in the World Setting. This study will seek to find ways of making more clear to ourselves and to the world the unique aims, ideals, and substance of our society and the Great American Dream. In seeking to throw more light on the industrial and technological influences in American society, the project will supplement studies in our School of Industrial Management.

These two grants, the Rockefeller and the Carnegie, to new programs in the School of Humanities and Social Studies serve to emphasize how an institute of technology widens its boundaries in response to the increasing role of technology and technologists in both national and international affairs. It was said of the Athenians that it was their destiny "to make gentle the life of mankind." It has been said of the Western world that its tradition has been to "do something for mankind." I venture to suggest that a flourishing science and its benign use give our American society powerful means to further both of these great humane traditions. Certainly our institutes of technology with their freedom from encrusted academic tradition have before them an opportunity for a major advance in education by demonstrating that science and technology are essential and natural partners with the other great professions in the furtherance of these noble social and cultural objectives.

The effort to relate our M.I.T. education to all relevant domains of thought and creative activity has been quickened during the year by the use of the Kresge Auditorium and the M.I.T. Chapel. As Professor Bush-Brown wrote in the Boston *Herald* yesterday (June 12) these boldly innovating buildings affirms three important beliefs: (1) that the heart of religious worship consists of meditating about questions of value, purpose, and destiny in an environment that gives insistent urgency to those questions; (2) that environment must be organized artistically unless our educational attempts of teaching the next generation about order, neatness, and values that are nonutilitarian are to be thwarted; (3) that specialties in engineering and the humanities must be synchronized in one unified art of creativity in order to give our civilization meaningful shape.

May I now turn to our problem of enrollment at the Institute, and discuss it in relation to national and international trends in the demand for education. I have already noted that M.I.T. has accepted a large increase since the war. Next fall our enrollment may exceed 5,700 compared to 3,100 in 1939-1940. This increase reflects our response to the world scarcity of scientists and engineers together with the increased scope of the Institute's program. In considering what we do from now on, we are acutely mindful of the tidal wave of students now rushing through our

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The Baccalaureate for the Class of 1955 was held, for the first time, in the Kresge Auditorium. Members of the Faculty are gathered on the stage as Dr. Eliot gives the address.

“Freedom is a Noble Thing”

By FREDERICK MAY ELIOT

ABOUT a month ago, this auditorium in which we are gathered and the M.I.T. Chapel close by were dedicated in an impressive and moving service; and one of the most stirring parts of the program was the “Canticle of Freedom,” the composition of which had been commissioned for that occasion, and the first performance of which was given by the Symphony Orchestra, the Glee Club, and the Choral Society of the Institute, under the direction of Professor Liepmann.

In the writing of that deeply moving work of art two great artists collaborated — Aaron Copland, who represents the creative genius of modern music as vividly as any living composer, and John Barbour, the father of the poetry of Scotland, from whose most famous piece, written in 1375, the words of the Canticle were taken. Between these two artists lies a span of nearly six centuries, and during that period almost everything we think of as characterizing the “modern” world has come into existence.

Almost everything, but not quite; for the word “freedom” expresses something that has not changed in any of its essential qualities since the Battle of Bannockburn which John Barbour celebrated in his poem about Robert Bruce. Indeed, all that is essential in the concept of freedom as we use the word today goes back far beyond the Fourteenth Century, for it belongs to the oldest of all human traditions. One of our own Cambridge poets, writing of the struggle of his own generation to win freedom, spoke of that effort as “One new word of that grand *Credo* which in prophet-hearts hath burned/ Since the first man stood God-conquered, with his face to heaven upturned.”

BACCALAUREATE ADDRESS

When, therefore, in the dedication of its new center for the spiritual life of an educational institution of the mid-twentieth century, this Institute celebrated in terms of art the concept of freedom, it affirmed its allegiance to one of the few timeless values in all human experience. All that I have to say may be regarded as a footnote to that affirmation.

“Freedom,” wrote John Barbour, “is a noble thing.” It is noble, first of all, because of what it has cost, in terms of heroic sacrifice, eternal vigilance, and sheer stubborn resolution, through all the centuries. We think of the Maccabean martyrs, of the early Christians who defied the power of Rome for the sake of the liberty wherewith Christ has made them free, of the non-conformists harried out of England and seeking refuge on these shores; we think of the men who fought at Marathon and Lexington and on the beaches of Normandy; we think of the men who sweated out with infinite pains the basic principles of a political system by which freedom might be preserved and made effective in a changing world; we think of the quiet scholars who refused to submit and thus laid the foundations for academic freedom, of the artists in every medium who suffered contumely and poverty for the sake of a new word and the right to speak it.

We can sum up the whole record in the sober words of William Brewster, written of a little company who regarded themselves as the Lord’s free people and were resolved to maintain their freedom at any price: “And that it cost them something this ensuing history will declare.” Freedom is a noble thing because of what it has cost.

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The March of Mind

By SIR ROGER MAKINS

COMMENCEMENT ADDRESS

PEOPLE nowadays do not often read that witty and pungent English writer, Thomas Love Peacock, who flourished at the time of the industrial revolution in Britain. But I am one of his fans, and I always remember the following passage in his novel, *Crochet Castle*: "God bless my soul, sir!" exclaimed the Reverend Doctor Folliott, bursting, one fine May morning, into the breakfast-room at Crochet Castle, "I am out of all patience with this march of mind. Here has my house been nearly burned down, by my cook taking it into her head to study hydrostatics, in a sixpenny tract, published by the Steam Intellect Society.—My cook must read this rubbish in bed; she dropped suddenly fast asleep, overturned the candle, and set the curtains in a blaze. Luckily, the footman went into the room at the moment, in time to tear down the curtains and throw them into the chimney, and a pitcher of water on her nightcap extinguished her wick: She is a greasy subject, and would have burned like a short mould."

Now ladies and gentlemen, it is a far cry from the Steam Intellect Society to the Atomic Intellect Society, if there is one. But the quotation will serve well enough to give me a title for my address, "The March of Mind," and to fix a point of comparison with the contemporary scene. For it is essential to try to stand aside, every now and then, and relate what is happening in the world around us to the broad stream of history. And what better moment is there than an occasion like this, at a famous institution of learning and research, when the representatives of the older and the younger generation are gathered together so that the former can wish God-speed to the latter on the threshold of their active lives?

In these two generations, which are bridged by my own life's span of half a century, we have had, in the field of politics, two world wars, and two major revolutions, in Russia and in China. In this period we have withstood massive assaults on the fundamental beliefs and structure of our society and of our civilization. I say "our" because your American political and social organization is derived from European, and particularly from British models, and the same political and legal principles are enshrined in the great documents which are the charters and the title-deeds of our liberties. Again in this same period, and proceeding concurrently, we have witnessed an important stage in what the grandson of Charles Darwin has called the Scientific Revolution: the progressive mastery by man over the forces of nature. I am not forgetting Archimedes, or Newton or Faraday or any of the other famous names inscribed on your campus, when I suggest that the

20th century's achievement in the speed and range of scientific discovery and technological advance has never been surpassed.

Without overlooking the contributions of other countries, it is a fact, due partly to the circumstances of World War II, that much of the effort, and perhaps the major part of the progress, has been made in the United States and in Great Britain. It is sometimes said that Britain tends to be more prolific in ideas and basic research, while the United States is more adept at industrial application and production. Certainly the history of the early development of radar, television, penicillin and the jet engine bears this out. But however this may be it is equally certain that nothing can be more to our mutual benefit than the continuous cross-fertilization of thought and information between our two countries, and we can only lament any legislative barriers which, in some vital fields of research and development, may still hinder this beneficent process.

Some people today may be tempted to take the same recalcitrant attitude as Thomas Love Peacock to the impact on our own society of more recent advances in science, such as the development of the internal combustion engine, and the increase in the rate of communications in general. These have led to an almost frenetic acceleration of the tempo of modern life. They have stepped up the pressure on the individual, particularly the individual in the public service or in a position of authority in industry. They have threatened to make further inroads into the study of the humanities, into the time available for contemplation and reflection. Today we are all of us jet-propelled and wired for sound, and it is no wonder that some people may be inclined to complain with Peacock's contemporary, Wordsworth, that "The world is too much with us."

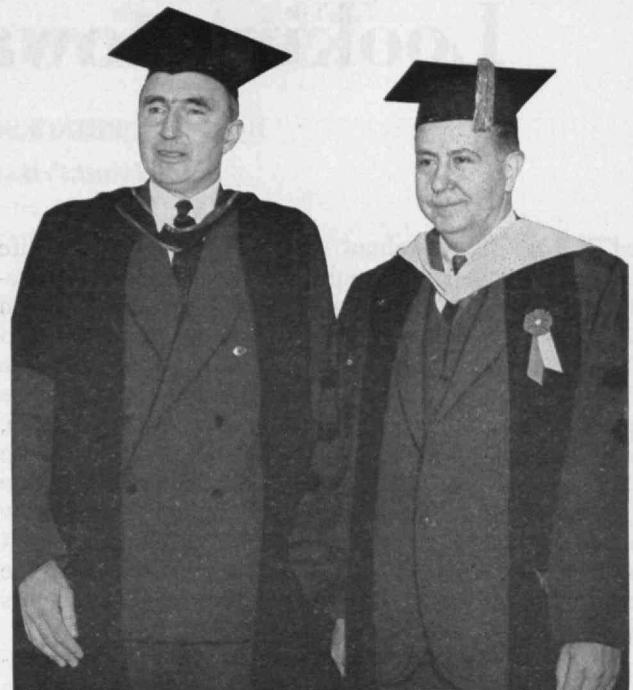
But no one in this audience, I imagine, will be disposed to resist the march of mind. There can be no question here, on the banks of the Charles River, of wishing to dam the flow, the free flow, of scientific enquiry, wherever it may lead, whether it be to a hydrogen bomb or to a vaccine against poliomyelitis. There can surely be no disposition to check the march of science and technology in a free society. Yet if we accept these premises, we also accept a great challenge; how to use the effects of scientific and technological advance in raising our standards of living, moral as well as material; how to relate and apply them in our policies, national and international; how to integrate them in our political and social philosophy.

Let me first glance again at the point at which we stand in relation to the history of our time. Ten years ago we were between V.E. Day and V.J. Day. We

stood victorious against totalitarian aggression, but with the nations of Europe and Asia at least, both victors and vanquished, impoverished and exhausted. The victors followed a pattern, familiar from Vienna to Versailles. We tried to constitute an international organization which, while avoiding the complications of a world government, would provide for collective defense, and for collective action not only in the political field, but in economic and social affairs as well. According to a pattern also only too familiar, the victors soon fell out among themselves. Having overcome one form of totalitarian tyranny, we found the world again threatened by another brand, supported this time by the might of Soviet Russia, which had not dismantled its armaments after the war. Thus the United Nations was prevented from fulfilling all the intentions and hopes of its founders; and a general line of conflict, geographical and doctrinal, was drawn between nations grouped around what had become the two great centres of power, the United States and the Soviet Union. For the United States, by virtue of its huge preponderance of resources, both economic and military, had assumed, reluctantly but inevitably, the leadership of what came to be called the free world.

At the same time, the pressure of wartime necessity had led to those far-reaching advances and scientific developments in Britain and the United States, which, when further exploited and applied to arms production, would revolutionize war as we had hitherto known it. It was more than anything the fear of these new weapons,—and fortunately the United States had the predominance in them—which limited fresh outbreaks of hostilities to a purely local scale. And so we have been living through what is usually and not very happily called “the cold war.” This has been a period, too, of great political, as well as strategic change. Partly as a result of the emancipations which war promotes, a number of great peoples in Asia, in Africa and in the Middle East achieved, for the first time or at least for the first time in decades or centuries, complete independence. In the past 10 years, 16 countries, with a total population of over 600 million, have begun to stand entirely on their own feet in the world. It was especially the leaders of these newly independent countries who feared the consequences of the strained relations between the two great groups of nations. Their concern was deepened by the emergent power of Communist China, which, while still closely allied to the Soviet Union, was asserting a policy both of independence and of expansionism. The fear of involvement in a world struggle, at a time when these new nations were trying to settle their pressing internal problems, made them, like your own country for many decades after 1776, wary of identifying themselves too closely with either one or the other of the major power groupings. At the same time, they felt strongly the need to develop their resources and raise their standards of living, while fully safeguarding their new-found independence. They are hungry for the fruits of the scientific revolution.

These fears and these longings led, earlier this year, to a new phenomenon in the political history of the world, a gathering at the city of Bandoeng in



Sir Roger Makins, British Ambassador to the United States, with President Killian, just before entering the Rockwell Cage where Sir Roger delivered the Commencement Address.

Indonesia of representatives of the Arab and African countries, of the India sub-continent, and of South East Asia. This conference may well be a milestone in the history of our time. Already there had been accumulating signs of an apparent relaxation of that Communist pressure on the free world which was the real cause of the cold war, at any rate so far as Russia was concerned. This easement was doubtless partly due to political factors like the death of Stalin, or the Kremlin's concern over Chinese expansionism. But its most important causes were probably technological: a starker realization of the implications of nuclear warfare, and economic difficulties within the Soviet empire.

Now, the Conference at Bandoeng has been followed by the first traces of a thaw in the cold war in the Far East. And there is no reason, as I speak, why this process of thaw should be reversed, however gradually, however slowly, it may proceed. Bit by bit, step by step, we may hope for at least modest progress towards better relations between east and west. This in turn could lead to some measure of disarmament, some lightening of the defense burden upon our peoples, and the liberation of further resources for peaceful development. We stand, perhaps, at the beginning of a period in which our minds and wills can reach out to master the additional threats which the progress of science has imported into international relations. A balanced scheme of disarmament and the control and ultimate abolition of weapons of mass destruction are the avowed objectives of all the leading countries. There is a great reservoir, which must be emptied of mistrust and refilled with confidence, before these objectives can be achieved. But perhaps we are on our way.

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Looking toward Tomorrow

By H.R.H. PRINCESS ILEANA OF ROMANIA
LADIES' BANQUET ADDRESS

THE things about the American way of life which really would give the most encouragement to the peoples behind the Iron Curtain are our full churches, the beauty of our books, and the spirit that prevails in, and leads, a place like M.I.T. Emphasis on these things, rather than as the Hollywood movies depict us — as a restless people, with an affinity for gadgets and automobiles of the latest model — would weigh in our balance with the people in captive countries. Although much publicity will be given to the new nuclear reactor to be built at M.I.T., individuals in captive countries will be happier to hear that a scientific school, such as M.I.T., has built a chapel.

One impressive and admirable quality of Americans is their desire to help other people to become a success. Europeans do not possess this quality; there is a jealousy in other countries. Americans encourage people to go forward, to become somebody, and this is one of the great secrets of American success. Americans help and admire each other, and expect people to succeed. By expecting the best, they get the best.

Romania is a good example of what happens to non-communist countries when they fall under totalitarianism. The free countries should remember that communism does not always succeed because it is in the majority or because it is the popular vote; its growth is through fear and the suppression of freedom — the kind of freedom which permitted the Alumni Day symposium talks on atoms for peace.

This text represents The Review's report, rather than a literal transcription of the address made at the Ladies' Banquet, June 13.



An informal photograph of H.R.H. Princess Ileana of Romania in the Great Court at M.I.T., immediately after the luncheon on Alumni Day.

The best allies of the Western countries are the people behind the Iron Curtain. They know and realize the value of freedom because they have lost it, and yet they cannot revolt because they have no power. The group which possesses the arms and the food has all the power, and the communists know how to acquire these. What would the United States do if they did revolt? East Germany is a sample. Everyone pretended not to notice. Yet despite the seeming indifference to their fate, at one time, as a gesture against collective farming, 5,000,000 people lost their lives in the Ukraine. They died of hunger because they refused to feed the invader!

What can we do to give these people courage? We must give much thought to the future. The question is not whether there will be a war, or a peace, but — what are we going to do after peace or war? With whom are we interested in making friends? Leaders die, governments fail, but let us remember that the people are eternal. It is the peoples' friendship we want — not those who represent them, for it is the people who are eternal; not their governments. It is the peasants who carry arms, bear children, speak the language, have allegiance to the soil — all things out of which freedom is born. That feeling of freedom is born from love of soil. People in all countries have the same dream of unity and of freedom.

How can there be peace if people have lost confidence in us? Perhaps the people in oppressed countries should think of present leaders and governments only as a bridge in a troubled time, and forget the political maneuverings which have been stopgaps.

People from all nations must get together and learn to know and to understand one another, at a time in history when there are two dominant forces: freedom and communism. The free countries must realize that nothing really penetrates behind the Iron Curtain; there is no fair exchange of ideas; the fear engendered by communism produces no leadership. The people who will not submit to totalitarianism are the danger to Moscow today, and our job is to encourage them. The communists continue to rule through fear, and therefore, we must build strong evidence to show that we are fearless. Materially, we are strong, but this strength can be increased if we develop an inner power. Our weakness is a moral one, and we are too dependent on physical and material strength. Ultimately, we must acquire a spiritual strength, and at present we do not think sufficiently in this direction.

The freedom we seek and want to share is a thing of the spirit. Because communism has power and attracts people, we must oppose it with something stronger and more vital. Let us live our lives for God, and, in the service of humanity, serve Him first. Unity in the world can be attained when we know the strength of love. Perfect love casts out fear.

Is War Inevitable?

By ARTHUR S. FLEMMING
ALUMNI BANQUET ADDRESS

As I travel about the country and speak with various groups, I find our citizens vitally interested in problems of our national defense. One of the questions I am most frequently asked is simply this: "Is war inevitable?" My answer to that question is always the same: "No! I do not believe war is inevitable!" I believe that the potential of the United States is sufficient to enable us to exercise the kind of leadership that can bring peace to the world. I believe we must have in effect what Sir Winston Churchill called "defense through deterrents" and that we must strengthen our spiritual foundations. This is not an all-inclusive list of things we must do, of course. I do feel, however, that we must achieve certain objectives in these two areas.

In a speech before the House of Commons last March Sir Winston Churchill said, in part: "There is only one sane policy for the free world in the next few years; that is what we call defense through deterrents. . . . These deterrents may at any time become parents of disarmament, provided they deter." What are some of the deterrents America must build into its defense program?

We must build and maintain a strong mobilization base. We must provide ourselves with the facilities, materials and equipment, plus the manpower, that will enable us to shift quickly into a sharply stepped-up mobilization program. We must develop supply requirements, balance and identify and close gaps. We must develop a tax amortization program designed to induce industry to put forth every effort on behalf of our national defense objectives. We must expand sources of supply and accumulate stocks of essential goods while maintaining a strong and healthy economy. Finally, we must maintain our base, giving due consideration to policies in foreign trade, to reserve programs for the armed services, and to our program of industrial dispersal.

We must devote our time, energy, and resources to the task of "keeping out in front" in the field of weapons development. We must keep ourselves in a position where we could retaliate swiftly and effectively if necessary. We must make a major investment in a system of intercontinental defense and warning systems. All of these deterrents — in which every citizen can participate — are designed to place our leaders in a position where they can deal with forces of international communism from strength.

In strengthening our spiritual foundation we recall a fundamental fact of Judao-Christian tradition in the commandment: "Thou shalt love thy neighbor as thyself." Thus we have an obligation to help our fellow human beings realize their highest possibilities. When we accept such a responsibility we give freely of our time, energy, and resources, without thought of self, to such institutions as the government, the welfare agencies of our communities and to our

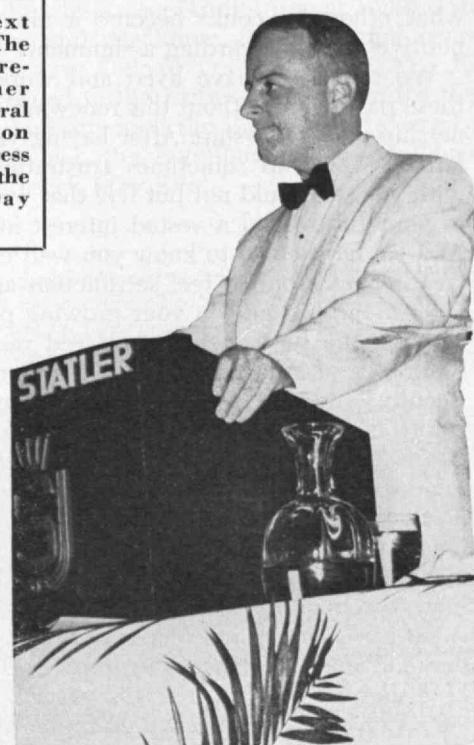
church. When we give of our time, energy, and resources to such institutions, we develop, as a result of our experiences, the conviction that life's greatest satisfactions come from helping others, and develop the conviction that persons live as they help others.

Out of such convictions come policies — and support for policies — that set into motion forces that can prevent war and bring peace. Such convictions produce support for President Eisenhower's program of "Atoms for Peace." We recall that this plan was presented to the United Nations Assembly in December, 1953, and that in presenting it, the President stated that it is designed to make sure that the marvelous inventiveness of man is not dedicated to his death but consecrated to his life.

War is not inevitable if we strengthen our spiritual foundations by applying to our lives the commandment "Thou shalt love thy neighbor as thyself." So it is clear that we hold in our hands the answer to the question, "Shall we have war or peace?" Each one of us can help to insure the success of the policy of "defense through deterrents." We can do this, for example, by participating wholeheartedly in our Civil Defense program. Each one of us can make a contribution to the strengthening of the world's spiritual foundations. We can do this by giving our time, energy, and resources to the church and faith of our choice. Are we going to be a part of the problem, or are we going to be a part of the answer to the problem? It has to be one way or the other; it is impossible for us to sit on the fence and be neutral.

This text represents The Review's report rather than a literal transcription of the address made at the Alumni Day Banquet.

Arthur S. Flemming, Director of Office of the Defense Mobilization, as he appeared while giving the principal address at Alumni Day Banquet.



A Benison from Friends

By JAMES R. KILLIAN, JR.

FAREWELL TO THE GRADUATES

THE great occasions and milestones of our lives, and graduation is one of these, are moments when we feel happily free to break through our normal diffidence and reticence and to voice in more personal words sentiments of felicitation, affection, and delight. On this, one of your great occasions, I would speak a concluding word to you in this spirit of unabashed sentiment. To the diploma you have won I would bestow in addition a benison and benediction from your fellows and friends in this academic community, especially those who permanently reside and work here.

I would not speak accurately if I said that our association with you had not been marked by moments of stress and discouragement. I would not be right if I assumed that your experience with the exactions of an M.I.T. education or our taut mode of living had left you with a sense of having lolled in a bed of roses or lived in a world where every prospect pleased. I think it would be accurate to say that we have learned and progressed together and that we, your senior associates, in this mutual enterprise have had the abiding satisfaction of seeing you steadily grow in grasp and reach and poise. In any great educational institution, this process of growth and achievement and leave-taking year after year never becomes commonplace or dully repetitive. It is the excitement and glory of teaching that this regenerative cycle of young people coming and going brings renewal to the spirit and new satisfactions to what otherwise could become a monotonously repetitive and unrewarding assignment.

We could not have lived and worked with you these past years without this renewing sense of partnership and fellowship. After having years of stimulating —yes, and sometimes frustrating—association with you, we could not but feel that we have a stake in your future and a vested interest in your career. And we have come to know you well enough in fair weather and foul to feel satisfaction and delight in your friendship and in your growing powers. Break through the hard-shelled, battered reserve and indifference of any one of us on the Corporation and Faculty, and you will find these latent feelings of pride, affection, and delight as you go forth. "Each of us (as Wallace Stevens phrased it) Beholds himself in you and hears his voice In yours, master and comiserable man." And so do we as we give you our benison today.

On the road ahead some of you will be successful in research or design, others ultimately in the responsible direction of great enterprises. Some of you may influence the life of our times by your qualities of leadership or by your discoveries and creative efforts or by some powerful exemplification of moral

strength or purpose. Others will win their success and make their contributions not on the super-highways of life but on the quiet back roads where character and ability and simple humanity yield rich careers, unacclaimed but gracious and the very substance of our society. Statistical probability predicts that a few of you will encounter roadblocks or highway accidents and thus may not achieve marked success in the conventional sense.

Whatever may befall you on your journey, success in the deepest and truest sense will be found in the dignity and poise which you reveal in meeting both the failures and the successes of life. It will be found in your perception and acceptance of high standards and ideal aims. Your success will reside especially in your relations with people, in your capacity to be compassionate as well as steadfast, tender as well as high-minded in your loyalties and your allegiances. It was said eloquently of the Athenians that they had the gift of making "gentle the life of mankind." In our benison we include the hopeful anticipation that you will mix with your professional accomplishment some of this ingredient for making gentle the life of our turbulent times, for cultivating civility in a period of harsh and brutal incivilities.

To these unabashed and unsophisticated good wishes, I add two more arising out of the special character of this institution and your education. The first is that you serve as expositors and exemplars of the true spirit of science and the other noble disciplines whereby man seeks to understand the universe and himself. We have been living in a period marked by both subtle and gross assaults on the intellectual life. The whole domain of science has been especially subject to barbarian infiltration and to the misrepresenting propaganda that it endangers man's nobler aims and ends. In the face of the practical responsibilities which rest in science for our security and our material welfare, it is all too easy for people to become bemused by the sophistry that science is inimical to the spiritual ends of life, and for them to fail to understand that instead, it is one of man's most powerful and noble means for searching out the truth and augmenting man's dignity by augmenting his understanding. You and we have an obligation to make this true character of science better understood, and to do so, not by the arrogant advocacy of science and technology as the only means to increase our understanding and well-being, but by the balanced and tolerant presentation of the scientific spirit as one of the great and powerful methods by which man can increase his knowledge and understanding and still stand humble and ennobled before the wonder and the majesty of what

(Concluded on page 534)

"And Departing, Leave Behind Us"—

**Compton Memorial Fund Reaches One Million Dollars,
Alumni Discuss Peaceful Uses of Atomic Energy, and
M.I.T. Awards Nearly 1,000 Degrees at Commencement**

THE program of Alumni Day, June 13, and of the Commencement exercises of June 10—which concluded the Senior Week social whirl—were the most significant events in bringing another year of activity at M.I.T. to a successful close.

Since the Class of 1954 left Cambridge, the Institute has witnessed great sadness in the loss of a former president—Karl Taylor Compton—and several other members of the Corporation and Faculty. But the year has also brought satisfaction and progress, especially in the completion of the new Kresge Auditorium and Chapel, as reported in full in the June issue of *The Technology Review*. As members of the graduating class departed, they left behind them a new tradition—that of using to the fullest, for their intended purposes, these new additions to the Institute's physical plant—for a number of year-end class events were staged for the first time in the auditorium or chapel.

Continuing the practice re-established last year, Alumni Day 1955 opened with a morning conference on "Uses and Economics of the Peaceful Atom" held in the Kresge Auditorium. Distinguished leaders in the field of atomic energy took leading roles in this conference which was open to all Technology Alumni who wished to return to M.I.T. for the occasion. But a special effort was made this year to invite non-Alumni leaders in business, education, and industry as Technology graduates faced the problems of adapting our way of life to new conditions which the atomic age inevitably presents.

Two other innovations of Alumni Day are worthy of recording at this point. Advance copies of the new,

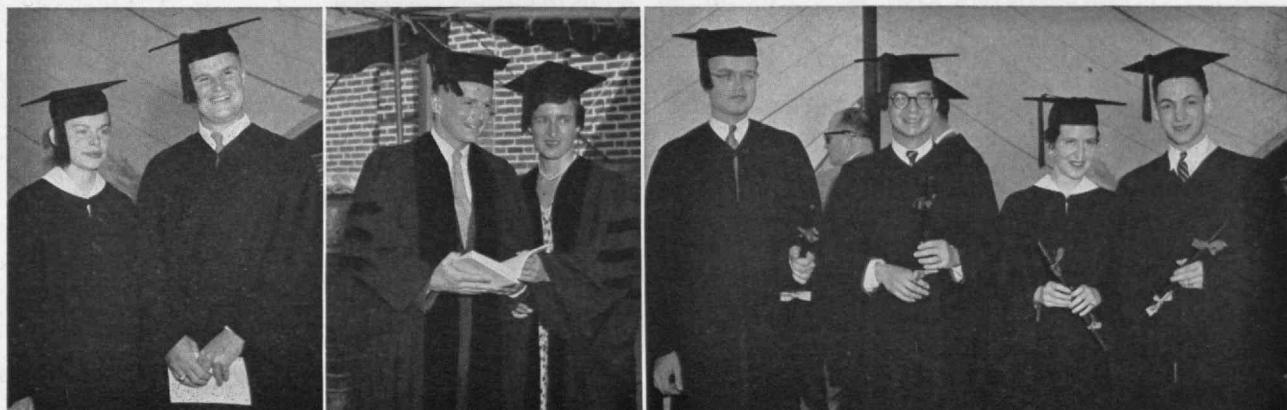
tenth edition of the "Register of Former Students" made their appearance on June 13, and by the time this issue reaches *Review* readers, advance orders for this reference work will have been filled. The second innovation of Alumni Day 1955 was a change in the banquet from the usual "Stein-on-the-Table" affairs of former years, with souvenir steins as pleasant remembrance of a happy event. This year those who attended the Alumni Day banquet took home, as souvenir, one of the Wedgwood dinner plates designed by Samuel Chamberlain, '18, and showing scenes around the Institute.

Senior Week Events

More than a week of social events for members of the graduating Class began on June 1 with the Senior Banquet in Rockwell Cage. The Class Party and Carnival was held at Walker Memorial the evening of Saturday, June 4, and the following evening, June 5, the Class of 1955 attended the Boston "Pops" Orchestra Concert, at Symphony Hall. The Seniors took a cruise from Rowes Wharf to Nantasket on Monday, June 6, and held their annual Senior Ball at the Sheraton Plaza Hotel on Tuesday, June 7. No activities were scheduled for June 8.

On Thursday, June 9, members of the graduating class marched to the Kresge Auditorium at 10:30 A.M. for joint Army and Air Force commissioning exercises of the Reserve Officers Training Corps. At 1:15 P.M. they returned to the Kresge Auditorium for the class picture and attended the Baccalaureate service at 3 P.M. at which the Baccalaureate address was given by Frederick May Eliot.

Two married couples were among those who received degrees at this year's commencement exercises. (left) Cora Sleighter Stackelberg received a S.B. degree in electrical engineering while Olaf Patrick Stackelberg received the S.B. degree in mathematics. (Center) John D. C. Little, '48, and Elizabeth Alden Little, both receive the Ph.D. degree in physics. (Right) Officers of the Class of 1955 are (left to right): Walter Chandler Stevens, President; John Joseph Seiler, Vice-president; Miss Dell Fleetwood Lanier, Secretary-Treasurer; and Lavan Dennis Shapiro, Assistant Secretary-Treasurer.





Honored guests at the Commencement Day luncheon included (left to right): Godfrey L. Cabot, '81, William Barker, British Consul General, Mrs. Frank J. Chesterman, Hugh S. Ferguson '28, President of the Alumni Association, Mrs. Erwin H. Schell, Walter C. Stevens, President, Class of 1955, Mrs. James R. Killian, Jr., Sir Roger Makins, British Ambassador to the United States who gave the Commencement Address and President James R. Killian, Jr., '26.

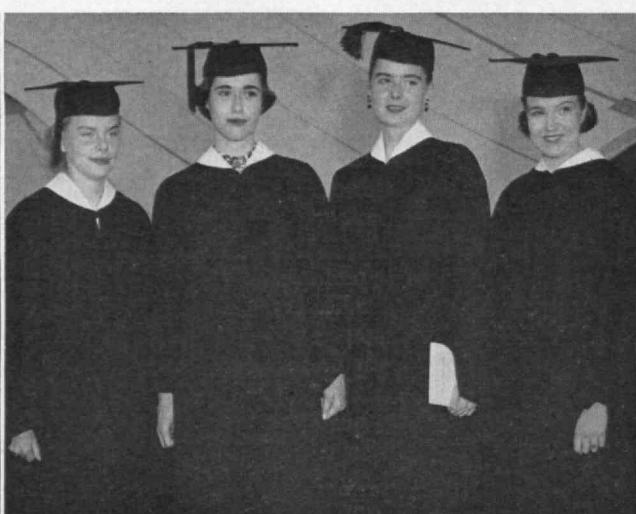
Commissioning Exercises

The commissioning exercises of the United States Army and the United States Air Force were held as a part of commencement exercises this year. Vice-admiral Edward L. Cochrane, '20, represented M.I.T. in his role as Vice-president of the Institute. With a Navy man in such a post all three services may be said to have taken part in the exercises which were opened with the General's March played by the Needham High School Band. The invocation was given by the Reverend Peter B. Flynn, of the Church of the Advent in Boston. Brigadier General Einer B. Gjelsteen, Commanding General of Fort Devens, Mass., and Brigadier General Kurt M. Landon, Deputy Commander, Air Research and Development Command, Baltimore, presented commissions for the Army and Air Force, respectively.

In introducing the two Generals who made the presentation of commissions Vice-president Cochrane commented on the value of mottoes as a guide to a way of life. Mottoes, he said, were used more frequently in the past than now, but there is merit in paying attention to them, especially on occasions such as those of commencement and commissioning exercises. He reminded the audience that the M.I.T. motto, "Mens et Manus" stood for "Hand and Mind"; that the motto of the Naval Academy was "Out of Knowledge Comes Sea Power," and that the Military Academy had adopted the motto "Duty, Honor, Country." Taken together, these three mottoes provide adequate guidance for the conduct of life, whether military or civil.

General Gjelsteen commented on the vast changes that have taken place in military affairs. Even President Eisenhower had commented on the changes that had taken place in the four decades since he graduated from West Point. But in the midst of change of vast proportions, the need for leaders remains fixed and constant. Leaders must be trained now, while there is time for such training; we cannot wait until we need them. General Gjelsteen reminded the audience that, for the United States, every war is a "reservists" war; we cannot conduct military operations solely by use of professional soldiers. The Reserve Officers Training Corps is the backbone of the officers corps. The future task of those graduating from the Institute and receiving commissions will be the application of science and engineering to military applications and needs. The R.O.T.C. program, said General Gjelsteen "is our way of stockpiling officers, leaders, and engineers." Such stockpiling does not become out of date or obsolete, but increases in value with the years.

General Landon also commented on the need of well trained leaders as a matter of national defense. Step by step, and at an ever increasing rate, the methods of warfare are ever increasing. Today modern warfare is so devastating that it is doubtful if either the victor or the vanquished could enjoy the fruits of combat for at least many years after conflict. This, in itself, is a deterrent to war. Certainly this nation has nothing to gain by conducting war. We covet no nation, no people, no part of the world which is not ours. We have everything to lose by entering into a war of aggression. We are interested



Among almost a dozen members of the distaff side who received degrees this June were (left to right): Ella Margreta Paton, Franceline Ann Cullen, Mrs. Cora Sleighter Stackelberg, Marolyn Coffin Kimball, Marilyn Fraser, and Joyce Patricia Davis. The relatively large number of women graduates, in what has commonly been considered to be a school for men, continues to lend emphasis to the co-educational nature of the courses of instruction at the Institute.



Other guests at the Commencement Day luncheon were (left to right): President Killian, Mrs. William Barker, Frank J. Chesterman, '05, Eldon Reiley, '55, Mrs. George A. Znamensky, Erwin H. Schell, '12, who becomes Professor Emeritus, Mrs. Hugh S. Ferguson, and Ralph C. Young '29 of the Department of Chemistry, and George A. Znamensky, of the Department of Modern Languages, both of whom retired this June.

only in our own defense. In such a situation we cannot rely on mere quantitative superiority especially that achieved through technical achievement and talent. It is with this thought that the new officers take their commissions. Then, turning to the newly commissioned lieutenants, General Landon told them their horizons for service are unlimited.

Colonel Glenn C. Coleman, Professor of Air Science, administered the oath of office to 61 graduates in the Air Force and 111 in the Army. A few of the graduates will receive their commissions upon completion of summer training; but most pinned on their bars as officers at the end of these exercises.

Following the presentation of commissions, the Needham High School Band — which has taken part in commissioning exercises for the past several years with consistently commendable performance — played the National Anthem, and the exercises were concluded with the benediction given by Rabbi Herman Pollack, adviser to the M.I.T. Hillel Society.

The Baccalaureate

The Baccalaureate for the Class of 1955 was held at 3 p.m. in the Kresge Auditorium on Thursday, June 9. Since the organ for the new auditorium has not yet been installed, Melville Smith used the organ in the Chapel for a program transmitted by wire to the Auditorium. Organ prelude included "Pastoral in Four Movements" by Johann Sebastian Bach, variations on "Mein Junges Leben" by Jan Pieters Sweelinck, and organ prelude on the Welsh tune, "Rhosymedre" by Ralph Vaughan Williams. Graduates entered and took their seats to the "Procesional" by Frank Bridge, and "March in C" by Nicholas le Begue. The invocation was given by the Reverend J. Edward Nugent, Chaplain of the Technology Catholic Club; the M.I.T. Brass Choir rendered "Paduana" by Benedictus Grep, and Rabbi Herman Pollack gave the Meditation.

Frederick May Eliot, President of the American Unitarian Association gave the Baccalaureate address, "Freedom is a Noble Thing." The theme of this address — which the Review brings to its readers on page 479 — is taken from the apostrophe to freedom in "The Brus," by John Barbour, and was expressed in Aaron's Copland's "Canticle of Freedom" at the dedication exercises of the Kresge Auditorium

Facing the camera as they welcome guests in the reception line after Commencement Day luncheon were President Killian, Mrs. Killian, Julius A. Stratton, '23, Vice-president, Mrs. Stratton, and (partly hidden by lady in straw hat) Walter C. Stevens, President of Class of 1955.

The Reverend John Crocker, Jr., Episcopal Chaplain to M.I.T. students, gave the benediction, and Melville Smith concluded the exercises with the postlude "To God on High Alone Be Praised" by Johann Sebastian Bach.

Although not taking speaking parts in the exercises, President Killian, Provost Stratton, and Heads of Departments were in attendance and on the podium as shown in the illustration on page 479.

Commencement Exercises

Approximately 4,500 relatives and friends of those taking part in commencement exercises gathered at Rockwell Cage on Friday, June 10, to witness 927 students receive a total of 967 degrees as of this June. Several dozen more who took part in the exercises received their degrees as of last September or last February.

After more than a full week of cold, damp, uninviting New England weather, June 10 dawned bright and fair, and the day was perfect for the occasion.

Graduates and those taking part in the academic procession gathered about 10 a.m. in the Massachusetts National Guard Armory, adjacent to the Rockwell Cage, for robing. Promptly at 10:30, as Melville Smith, playing at the organ at the new Kresge Chapel, played marches suitable for the occasion, the academic procession of graduates, the Faculty, members of the Class of 1905, representatives of the Class of 1940, the M.I.T. Corporation, and guests of honor entered the Rockwell Cage and took their seats.

As President of the Alumni Association for the year 1954-1955, Hugh Ferguson, '23, opened the exer-





Seated at the head table at the Alumni Day luncheon are (left to right): H. E. Lobdell, '17, Mrs. Allen W. Burke, Mrs. Fred W. Goldthwait, Dr. Shields Warren, symposium speaker, Mrs. Edward L. Cochrane, Godfrey L. Cabot, '81, Mrs. Hugh S. Ferguson, John von Neumann, symposium speaker, Mrs. Richard S. Morse, and President Killian.

cises, and the invocation was given by the Reverend George Arthur Buttrick, Preacher to the University, Harvard University. President Killian then introduced the Right Honourable Sir Roger Makins, British Ambassador to the United States, who gave the principal address on this important occasion. Sir Roger's stimulating address pointed out the need for science and technology to be used constructively in fostering international relations, and urged the graduates to use their technical training, supplemented by knowledge of history and international relations, to promote world peace. The Commencement Address is one which every graduate will wish to reconsider after the excitement of the occasion is past, and The Review is pleased to publish Sir Roger's address (page 480) as part of its report of this Commencement.

President Killian, assisted by George R. Harrison, Dean of the School of Science, then made the presentation of the Goodwin Medal, to James Kenyon Knowles, teaching assistant in the Department of Mathematics. The Medal, named after the late Harry Manley Goodwin, first dean of the M.I.T. Graduate School and an outstanding and beloved teacher, is awarded to a graduate student member of the academic staff for conspicuously effective teaching. Mr. Kenyon will continue teaching another year at the Institute, and President Killian took obvious satisfac-

tion in awarding the Goodwin Medal, a certificate, and a check, to Mr. Kenyon, who had been voted by Technology Students most deserving of this award. Freddie David Ezekiel, and Francois Lamy received Honorable Mention for excellence in teaching.

The Deans of the Institute's six professional schools, together with Julius A. Stratton, Vice-president and Provost, and Robert M. Kimball, Secretary of the Institute, awarded the diplomas to the graduates, and invested hoods to those receiving the doctorate degrees.

President Killian gave the Charge to the graduates, which The Review is happy to publish on page 484 of this issue. The ceremonies were concluded with the academic recession of the assembly and organ postlude.

The Class of 1955 was somewhat unusual in having four, rather than three Class Officers, one of whom was a young lady. It was unusual too, in that nine members of the distaff side received bachelor's degrees, and one received a master of science degree, and one received a Ph.D. degree (as of September 1954). Among those receiving degrees were two married couples: Olaf Patrick Stackelberg and Cora Sleighter Stackelberg received bachelors degrees together, and John Dutton Conant Little and Elizabeth Alden Little took their Ph.D. degrees together, both in physics.

Members of the Class of 1905 at one of the special 50-year tables on Alumni Day. In counterclockwise order, are: Willard C. Tilson, Daniel P. Pousland, Herman T. Gammons, George M. Bartlett, Mrs. Andrew Fisher, Andrew Fisher, Courtlandt W. Babcock, Mrs. C. W. Babcock, Henry P. Charlesworth, Leonard W. Cronkhite, Charles A. Emerson, William L. Spalding, Grove D. Marcy, and Herbert W. Kenway, Class President. Facing camera, far side of table, left to right are: Mrs. James E. Barlow, James E. Barlow, Mrs. Waldso Turner, Waldso Turner, Mrs. Roy H. Allen, Roy H. Allen, Mrs. Frank J. Chesterman, Frank J. Chesterman, Robert W. McLean, Willis F. Harrington, Mrs. Ralph E. Hadley, Ralph E. Hadley, and Gilbert S. Tower.





Guests at the head table on Alumni Day also included (in reading order): President Killian, Richard S. Morse, '33, Luncheon Chairman, Mrs. James R. Killian, Jr., T. Keith Glennan, symposium speaker, Mrs. Shields Warren, Hugh S. Ferguson, '23, Mrs. H. E. Lobdell, E. L. Cochrane, '20, H.R.H. Princess Ileana of Romania, Alan W. Burke, '20, and Fred W. Goldthwait, '05.

Commencement Luncheon

Upon conclusion of the Commencement Exercises, graduates, their families, members of the Faculty, and members of the 50-Year Class, assembled in the Du Pont Court, under canvas, for an informal Commencement Luncheon. The Great Court was the occasion for much camera clicking as proud graduates, in cap and gown, posed with parents, friends and relatives in the bright sunshine, in most cases with the large M.I.T. dome as background.

When nearly everyone had finished the buffet-type luncheon, President Killian opened the informal part of the program in which members of the Faculty, and representatives of the Classes of 1905 and 1955 had opportunity to speak.

President Killian reminded the audience that this luncheon was planned to be informal, and that different groups, as noted above, were represented at the head table; the gathering of representatives of the Class of 1905 as well as the Class of 1955 was taken to symbolize the perpetual youth with which a university is surrounded. President Killian quoted a statement by Sir Winston Churchill which emphasized the perpetual youth of university life, and which emphasized that a university looks to the future rather than to the past. Technology, said Dr. Killian, expressed its perpetual youth by inviting members of the 50-year Class to the luncheon, but there are other ways of demonstrating perpetual youth. Godfrey Cabot, member of the Corporation

and Alumnus of the Class of 1881, was present at the head table. He was born six days before Lincoln was inaugurated for his first term as President of the United States.

Speaking of the youthfulness of the Class of 1905, President Killian outlined certain characteristics of this Class. It was this Class who opposed the merger with Harvard at a time when M.I.T. finances were in a precarious condition. Since 1905 the reputation of M.I.T. has not changed, and the members of the Class of 1905 have done much to maintain Technology's reputation. Singled out for mention were a number of members of the Class of 1905 who had made contributions of note since they graduated from Technology half a century back.

President Killian then called on a prominent member of this distinguished Class to speak on behalf of the Class of 1905 — Frank J. Chesterman. Speaking for his classmates, Mr. Chesterman recalled that there were about 600 members in the graduating Class of 1905, and that the Institute of half a century ago had considerably fewer advantages and facilities than it now has. There was, he said, virtually no undergraduate life; most of the students lived at home and commuted to the Institute. There was little contact with members of the Faculty, and Faculty-student counselling such as now exists was unknown.

Mr. Chesterman expressed pride that the Institute did not merge with Harvard in the tempting days when its finances were meager while Harvard had the McKay bequest for a school of engineering. Mr.

Present on left side of table, near to far were: Jack H. Flynn, '05, Mrs. A. Vaughan Gregory, Gilman B. Joslin, '05, George Fuller, '05, Willard E. Simpson, '05, Mrs. John Ayer, John Ayer, '05, Mrs. Jack Flynn, Mrs. Charles Smart, Charles Smart, '05, Henry J. Stevenson, Mrs. Isadore Nye, Isadore Nye, '05, and John A. Nolan, '03. At the right side of table, far to near, are: Mrs. Benjamin E. Lindsley, Benjamin E. Lindsley, Mrs. Myron E. Helpern, Myron E. Helpern, '05, Mrs. Eugen F. Kriegsman, Eugen F. Kriegsman, '05, Eliza Newkirk Rogers, '05, T. Herbert Files, '05, Mrs. T. Herbert Files, Miss Alice E. Buff, Henry A. Buff, '05, Arthur T. Balkam, '05, Chester R. Shaw, '05, and Fred P. Poole, '05.



Those at the head table of the Alumni Day Banquet are (left to right): Dwight C. Arnold, '27, president elect, Alumni Association; Joseph J. Snyder, 2-44, M.I.T. Treasurer, and Vice-president; Theodore T. Miller, '22, Chairman, Alumni Fund Committee; Edward L. Cochrane, '20, Vice-president; Arthur Flemming, banquet speaker; President Killian; Hugh S. Ferguson, '23, President, Alumni Association; T. Keith Glennan, symposium speaker; Julius A. Stratton, '23, Vice-president; Shields Warren, symposium speaker; Robert W. McLean, '05, who presented the 50-year class gift; John J. Rowlands, Head of M.I.T. News Service and newly-elected Honorary Member of the Alumni Association; John F. Bennett, '30, who presented the 25-year class gift; and Donald W. Kitchin, '19.



Honored too, were, (below, left to right): Mrs. Julius A. Stratton, Mrs. H. E. Lobdell, Mrs. Edward L. Cochrane, Mrs. Hugh S. Ferguson, Mrs. Theodore T. Miller, and Mrs. Gilbert M. Roddy.



While Alumni had their banquet in the ballroom of the Hotel Statler, the ladies had their own banquet in adjoining parlors. Cut at left shows honored guests at the left half of the head table, (left to right) as follows: Mrs. Joseph J. Snyder, Mrs. Donald W. Kitchin, Mrs. Avery H. Stanton, Mrs. James R. Killian, Jr., and H.R.H. Princess Ileana of Romania.



Chesterman also recalled another event in which Tech and Harvard were principals — a torchlit parade on the eve of a national election. The Harvard men paraded with cap and gown, whereas students from M.I.T., in utter disregard for such trappings, came out in overalls.

Mr. Chesterman stated that he felt his Class had missed some of the humanities which today's students can benefit by. In this respect, Harvard of 50 years ago had something that Technology lacked.

One of the greatest things that the Institute has done in recent years, Mr. Chesterman felt, was to establish the School of Humanities. Today's students have opportunity to flavor their technical studies with studies in the humanities and thereby to round out their development. Today's graduates have great responsibilities because of their training and capabilities. There is great need for well-trained persons having high devotion to public service, and he pledged support to M.I.T. from his own Class and urged such support from the Class of 1955.

President Killian then called upon Walter C. Stevens, permanent president of the Class of 1955. Mr. Stevens welcomed the parents and guests, paid tribute to the Class of 1905, and modestly stated that



Celebrating are the following men at the Alumni Day Banquet (left to right): William Binley, '97, Walter Humphreys, '97, Jere R. Daniell, '97, George R. Wadleigh, '97, Samuel T. Smetters, '96, Paul W. Litchfield, '96, and James M. Driscoll, '96.

the achievements of the Class of 1955 were largely due to the Executive Committee which was responsible for student government. Mr. Stevens then introduced the six members of this committee, and asked them to rise.

Eldon Reiley, '55, was then called upon by President Killian to speak on student government. Mr. Reiley thought it would be nice to be able to predict for his Class accomplishments such as those achieved by the Class of 1905. But, he said, science fiction writers seem to fear the future. Mr. Reiley felt his Class was not headed for a gloomy future, although he admitted that now that commencement was upon him, many members of the Class had an empty feeling in the knowledge they would leave Technology. They came to like the old place more and more as their studies continued. One of the principal reasons, he thought, was the fact that M.I.T. is alive — alive to the world around it. It is leading and making the changes we see in life, not merely following these changes. The Institute is vital; its vitality can be seen in the changes that have occurred in the past four years. It can be seen in the buildings, in the new courses, and new athletic and recreational facilities. What college, Mr. Reiley asked, would have the courage to build an auditorium in spherical shape, or a chapel in cylindrical shape? What college could boast of a Dean who — it is reputed — was ring-leader in a "panty-raid?" In conclusion he expressed thanks to members of the Faculty, to parents, and to his classmates.

President Killian then spoke of the coming and going of members of the Faculty. He announced that three members of the Faculty would retire this year, and introduced Professors George A. Znemansky and Ralph C. Young, '29, and gave brief biographies of them. He also spoke of the retirement of Professor Erwin H. Schell, '12, who had been one of Dr. Killian's most admired teachers, and asked Professor Schell to speak on behalf of the retiring Faculty members, which he did with typical verve.

Following the luncheon, President and Mrs. Killian, Provost and Mrs. Stratton, and Walter C. Stevens, '55, and Eldon Reiley, '55, greeted graduates and their relatives and friends in a reception line in the Great Court, adjacent to the tents in Du Pont Court where the luncheon had been held.



Alumni of the "Elder Statesmen" group at the banquet on June 13 included (left to right): Leonard B. Buchanan, '93, Norwin S. Bean, '94, Spaulding Bartlett, '90, George A. Packard, '90, Chester V. Carlton, '90, John L. Damon, '91, Harry H. Young, '91, and Samuel P. Hunt, '91.



Among those who celebrated their 25th anniversary reunion on June 13 were (above, left to right): William H. Buracker, Benjamin C. Buerk, Harvey W. Chapman, Irwin E. Ross, Jr., Morell Marean, Allen Latham, Jr., George F. Theriault, (pretty well hidden), Myron T. Smith, Hermon H. Scott, and Emmanuel L. Pavlo, all of the Class of 1930.

Another table of members of the Class of 1930 included (below, in usual order): Joseph Harrington, Jr., George P. Wadsworth, Richard M. Wilson, Parker H. Starratt, Robert D. McCarron, Gordon K. Lister, Ralph W. Peters, Stanley C. Wells, Henrietta J. Dane, and Donald W. Diefendorf.



Class of 1930 Reunion at M.I.T.

Following a precedent established three years ago, the Class of 1930 held its 25th year reunion at the Institute where Baker House was the center of activities. On Friday, June 10, a social hour was held in the afternoon and a buffet-type supper dance in the evening.

On Saturday, rainy New England weather returned for two days, but it did not dampen the spirits of the reunioning classmates. Guided tours of the Institute, including opportunity to visit the Kresge Auditorium and Chapel, were scheduled for Saturday morning. Walker Memorial was the scene of the Faculty reception and luncheon, and in the afternoon a social hour was held at Baker House. In the evening, while Alumni held their class banquet at the Parker House Hotel, the ladies had dinner at the Sherry-Biltmore Hotel and attended the "Pops" Concert at Symphony Hall in Boston.

Despite rainy weather, reunioning classmates and their families attended church on Sunday morning and then made a bus tour of the North Shore. By 2:30 P.M. they were enjoying a shore dinner at the estate of Mr. and Mrs. Morrell Marean in Marblehead Neck where 75 persons could be served at once on an outdoor porch. Last scheduled event of the quarter century reunion was a buffet supper at Baker House back at the Institute.

Alumni Day Symposium

Excellent weather returned to Boston for Alumni Day, when the Registration Desk in the lobby of the Rogers Building opened for early arrivals at 8 A.M. A few advance hand-bound copies of the 1955 edition of the *Alumni Register* which were displayed, drew favorable comment.

A conference on "Uses and Economics of the Peaceful Atom" was held in the Kresge Auditorium at 10:00 A.M. with Vice-admiral Edward L. Cochrane, '20, M.I.T. Vice-president, presiding over a panel of distinguished speakers. Those taking part in the symposium were John von Neumann, Commissioner of the Atomic Energy Commission, who spoke

on "Impact of Atomic Energy on the Physical and Chemical Sciences;" Dr. Shields Warren, Professor of Pathology at the New England Deaconess Hospital, who spoke on "Impact of Atomic Energy on the Life Sciences," and T. Keith Glennan, President of Case Institute of Technology, who spoke on "Impact of Atomic Energy on our Economy and Way of Life."

Admiral Cochrane welcomed the conference speakers and the guests on behalf of President Killian, and pointed out that the conference on Alumni Day, 1954, entitled "The Next Ten Years" was an experiment in organizing a general symposium on important topics of the day. But we are now concerned with harnessing atomic energy for peaceful uses and the great research activity in the field of atomic energy makes it necessary to look again at progress in this area.

Vice-president Cochrane reminded his audience that the harnessing of atomic energy for peaceful activities is not new in this country, but that the urgency of military needs of such energy, coupled with limitations of the Atomic Energy Act of 1947 hampered industrial participation.

It is The Review's privilege and pleasure to be able to make a comprehensive report on these conference addresses. The text of the addresses by Dr. Shields Warren and President T. Keith Glennan appear, respectively, on pages 471 and 473 of this issue. As this issue goes to press it appears that text of Dr. von Neumann's address may be made available when The Review resumes publication in the fall.

Alumni Day Luncheon

As master of ceremonies for the Alumni Day luncheon, Richard S. Morse, '33, introduced those at the head table — shown informally on pages 488 and 489 — and called upon President Killian for the major address. Dr. Killian's report to Alumni on recent and impending changes at the Institute, and emphasizing the sharing of peaceful objectives, is given in detail beginning on page 476 under the title "The Technology of Peace."

Following the luncheon, President and Mrs. Killian, together with President and Mrs. Hugh S. Ferguson, greeted guests in a reception line in the Great Court.

Philosophy of these members of the Class of 1905 who attended the Alumni Day Banquet, seems to be "You're only as old as you feel!" Left to right are: Harry P. Charlesworth, George Fuller (in Davy Crockett coonskin caps), Eugen Kriegsman, '05, Fred W. Goldthwait, (standing, with coonskin cap), Gilman B. Joslin (another Davy Crockett devotee), Gilbert S. Tower, Myron P. Helpern, Isadore Nye, and Courtlandt W. Babcock.



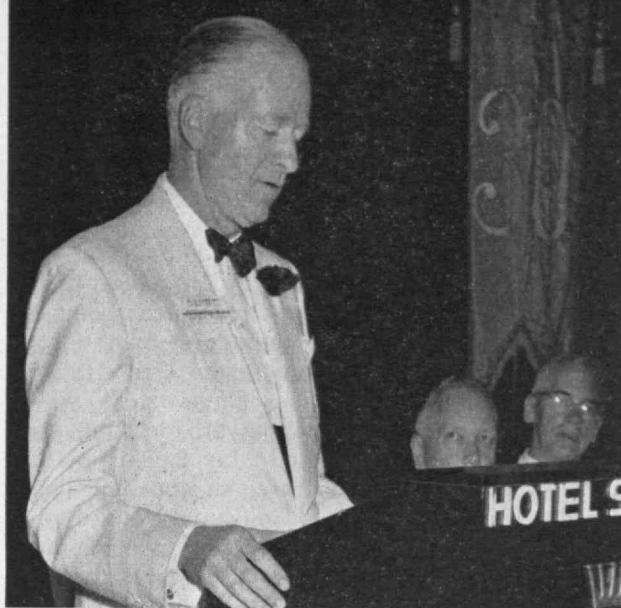
Alumni Banquet

Promptly at 7:00 the doors of the Ballroom of the Hotel Statler were opened for the 700 Alumni, who took seats at class tables while Harry U. Camp, '18, at the organ, played a group of Technology songs as background music. As usual, O. B. Denison, '11, led the singing of "Arise Ye Sons of M.I.T." and also of the National Anthem.

As retiring president of the Alumni Association, Hugh S. Ferguson, '23, introduced the guests at the head table, and called on Alumni who travelled from the greatest distances to take a bow.

On behalf of the M.I.T. Alumni Association, President Ferguson then awarded a certificate of Honorary Membership in the Alumni Association to John J. Rowlands, since 1926 Director of the M.I.T. News Service and for almost the same length of time an editorial associate of *The Technology Review*. By a vote of the Executive Committee, honorary membership may be conferred upon "any present or former member of the Corporation or any person or former officer of administration of instruction on the staff of the Institute or anyone who has rendered outstanding service to the Association or the Institute." Mr. Rowlands was cited particularly for his long, faithful, and self-effacing service in administering the Institute's news and public relations program for more

(Continued on page 504)



Theodore T. Miller, '22, Chairman of the Alumni Fund Committee derives much pleasure in announcing that the Fund has reached the all-time record of half a million dollars. In addition, this sum is equalled by an anonymous friend of the Institute, thereby raising this year's Alumni Fund to one million dollars as tribute to Karl Taylor Compton in whose memory the Fund was raised.

Afternoon Activities

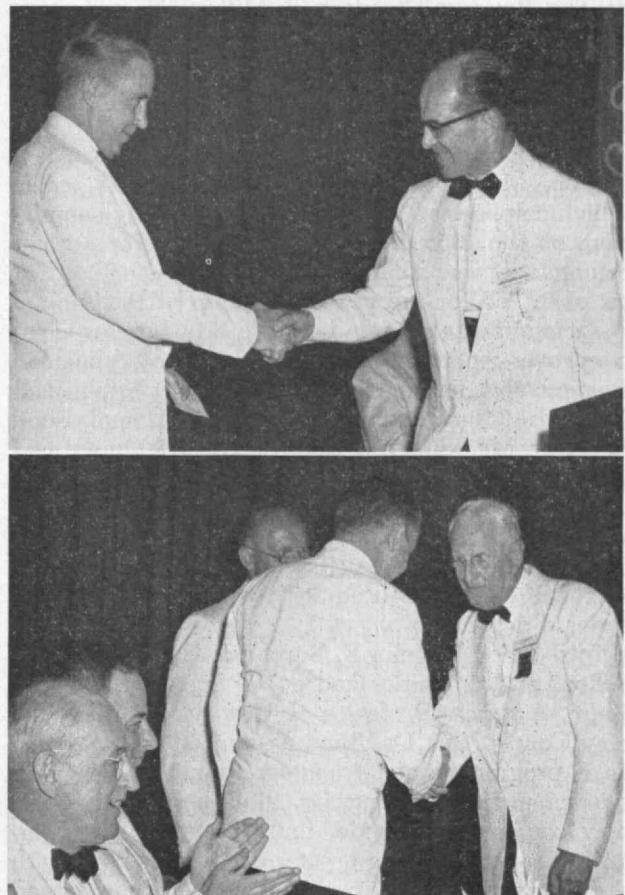
After the guests moved through the reception line in the Great Court, they were free to spend the afternoon in whatever way best suited their fancy. Most of those who returned to Technology for reunions, preferred to chat with classmates and other friends. But they could attend the chapel where, from 2:30 to 3:00 and again from 4:00 to 4:30 P.M., Philip M. Richardson, '26, gave a recital of organ music on the new chapel organ designed and built for the Institute by Walter Holtcamp of Cleveland. Or, they might have visited the new auditorium where, between 3:00 and 5:00 P.M. there was a continuous showing of two recent films about the Institute's current educational and research work.

Between 5:00 and 6:45 P.M. a social period was held at the Georgian Room in the Hotel Statler, preceding the banquet. Here several hundred Alumni and their ladies gathered for pre-banquet festivities. In addition, several classes held their own pre-dinner gatherings at various places in the Hotel Statler.

Ladies Banquet

At 7:00 P.M. 160 ladies attended their own banquet in Parlors A, B, and C of the Hotel Statler while Alumni had their banquet in the Ballroom. Mrs. Julius A. Stratton presided, introduced those at the head table, and paid tribute to Miss Julia A. Comstock and Mrs. James R. Jack, both ladies of whom have given long service to Technology. Mrs. Stratton also introduced the guest of honor, H.R.H. Princess Ileana of Romania, whose son was a member of the Class of 1955, and who gave a scintillating address, "Looking Toward Tomorrow" which The Review reports on page 482.

President Killian shakes hands with John F. Bennett (below), who has just presented the gift of the Class of 1930.



As Hugh S. Ferguson, '23, looks on (above), President Killian accepts the gift of the Class of 1905 from Robert W. McLean.

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Business Session

THE 311th meeting of the Alumni Council — the last one of the current school year — was held at the M.I.T. Faculty Club on the evening of Monday, May 23. Hugh S. Ferguson, '23, President of the Alumni Association, presided over the 113 members and guests who were present. Although considerably shortened in presentation from what was common in earlier years, reports on alumni affairs took up the business portion of the meeting.

As Treasurer, Donald P. Severance, '38, reported that the Audit and Budget Committee had endorsed the proposed budget of about \$67,000 for 1955-1956 which was approved by the Executive Committee. Also reported was that the Executive Committee had elected the following officers for 1955-1956: H. E. Lobdell, '17, Executive Vice-president; Mr. Severance, Secretary and Treasurer; Henry B. Kane, '24, Director of the Alumni Fund; and Miss Madeline R. McCormick, Assistant Treasurer.

Officers of the Alumni Association were announced, as recorded on page 407 of the June issue of *The Review*. Theodore T. Miller, '22, will serve a second year as Chairman of the Alumni Fund Board, and Whitworth Ferguson, '22, will serve on this board for a five year term beginning June 30, 1955.

As Executive Vice-president of the Alumni Association, Mr. Lobdell presented his annual report which emphasized work, which was nearing completion, on the 1955 edition of the *Register of Former Students*. It was announced that an anticipated deficit of \$2,350 for the year's operation of the Alumni Association would again be made up by excess of income over expenses for Volume 57 of *The Technology Review*, and that a new M.I.T. Club was established in Madrid during the past year. As Alumni Fund Director, Mr. Kane reported that 10,350 Alumni had contributed \$446,180 to the Alumni Fund for the current year, an amount \$212,000 more than last year's final figure. Also reported was the fact that 90 per cent of the Council members had contributed to the Fund to be used for the Compton Laboratories.

Introduced by John E. Burchard, '23, Dean of the School of Humanities and Social Sciences, John M. Blum, Associate Professor of History, described the new Course XXI. Dr. Blum outlined the new course as a program aimed to integrate humanities with science and engineering. Dr. Blum believes that this new course can provide, for a certain type of interested young man, a greater capacity to cope with the everyday complex problems of the engineer; and that it might serve as a preparation for young men going into public administration, law, medicine, and possibly even the liberal arts.

Edward G. Sherbourne, Jr., '41, Director of Programs for WGBH FM-TV, the radio stations of the Lowell Institute Co-operative Broadcasting Council, spoke on the growth and methods of operation of educational television stations in the United States. He emphasized the operation of WGBH-TV which initiated educational television broadcasting programs in the Boston area on May 2. This station operates on Channel 2 for three and one-half hours per day, five days per week. Unlike most educational television stations, WGBH is operated by a combination of educational institutions and cultural organizations which support the station and its visual programs. John E. Arnold, '40, Associate Professor of Mechanical Engineering, has been named the Institute's television co-ordinator for WGBH, and Robert Gilmore is the Institute's full-time producer-director.

Lowell School Graduates 153

ARTHUR L. Townsend, '13, Director of the Lowell Institute School, officiated at the 51st graduation exercises of this unusual educational institution on Thursday, May 26. The exercises were held at 8:30 p.m. in Huntington Hall at the Institute.

Gordon S. Brown, '31, Head of the M.I.T. Department of Electrical Engineering, brought official greetings from M.I.T. to the graduates, and William G. Sutcliffe, Dean of the College of Business Administration at Boston University, gave the Commencement Address. Ralph Lowell, Trustee of the Lowell Institute School and member of the M.I.T. Corporation awarded the certificates and diplomas to the 80 students who completed advanced or supplementary courses. Dr. Lowell and Professor Townsend shook hands with each student as he received his red-bound certificate.

As in recent years, another feature of the exercises was the tenth presentation of the Charles Francis Park Medal, awarded annually to recognize the outstanding member of the graduating class. The medal is named in honor of the first director of the Lowell Institute School and a former Technology professor. This year the medal was awarded to Juan Hamilton Crawford. After having served in the army and a year or two in industry in his native Buenos Aires, Mr. Crawford came to the United States for the express purpose of availing himself of the unusual opportunities which the Lowell Institute School afforded. His interest in the School was aroused by an article on the Lowell School a few years ago in the overseas edition of the *Christian Science Monitor*. Mr. Crawford requested his company to transfer him to its Boston office, and worked for his passage to this country in order to attend evening classes during the past three years as a student in the mechanical course.

Faculty Appointments

FOUR appointments to senior posts on the Faculty of the Massachusetts Institute of Technology were announced late in May by Julius A. Stratton, '23, Vice-president and Provost of the Institute.

Houlder Hudgins, Vice-president of Galen Van Meter, Inc., Financial Management Consultants, will become Professor of Industrial Management in the School of Industrial Management.

Knox Millsaps, chief of the Applied Mathematics Research Branch at the Wright Air Development Center, Wright Patterson Air Force Base, Dayton, Ohio, will be visiting professor in the Department of Mechanical Engineering for the 1955-1956 academic year.

Effective July 1, James A. Fay, '47, assistant professor in the Department of Engineering Mechanics at Cornell University, will be associate professor in the M.I.T. Department of Mechanical Engineering.

Professor Howard W. Johnson of the School of Business at the University of Chicago, will become associate professor in M.I.T.'s School of Industrial Management beginning in July.

Born in Brooklyn, New York, on May 22, 1900, Mr. Hudgins has had extensive business and industrial experience. He prepared for college at the Horace Mann School in New York, and was graduated from Cornell University with the degree of Bachelor of Arts in 1923. From that year until 1927 he was instructor of Industrial Management and Accounting in the School of Engineering at Cornell University. From 1928 to 1932 he was assistant to the treasurer and successively controller, assistant general manager, and merchandise manager of Mandel Brothers, a department store in Chicago. For five years beginning in 1933, he was manager of the Furniture and Home Furnishings Division of Montgomery Ward and Company. He left this firm to become president of Sloane-Blabon Corporation, manufacturers of linoleum in New York. Subsequently he became chairman of the Board of Sloane-Blabon Corporation and executive vice-president of Alexander Smith Carpet Company, its parent organization.

From 1942 to 1944 Mr. Hudgins was on leave of absence for war service. He was director of purchases of the War Production Board and vice-chairman of the Joint Board of Procurement Policy from 1942 to 1944 and for the ensuing two years he was chairman of the Floor Covering Industry Advisory Committee of the War Production Board and the Office of Price Administration.

Other positions held by Mr. Hudgins are: chairman of the McLain Trucking Company, 1945-1952; director and member of the Executive Committee of Certain-teed Products Corporation, 1939-1945; director of Allied Overseas, Limited, 1946-1948; president of Hudgins and Ratsey, Limited, 1945-1950; director and member of the Executive Committee of United Cigar-Whelan Stores Corporation, 1945-1953. He is now serving as director and member of the Executive Committee of W. and J. Sloane, Inc.; and director of Wilson Brothers, Inc. His service as vice-president of Galen Van Meter, Inc., began in 1953.

Dr. Millsaps, who will be at M.I.T. for nine months, is widely known for work in physics, mathematics, and mechanical engineering as applied to aeronautical engineering. A graduate of Alabama Polytechnic Institute and the California Institute of Technology, he has been a consultant for many aeronautical firms.

For two years after his graduation, Dr. Millsaps was on the teaching staff of the California Institute of Technology. Since 1947 he has held faculty positions at Ohio State University in aeronautical engineering, and at Alabama Polytechnic Institute in physics. He has been associated with the Office of Air Research and the Aeronautical Research Laboratory recently, before going to Wright Field.

Dr. Fay, who graduated in Naval Architecture from M.I.T. in 1947, holds degrees as well from the Webb Institute of Naval Architecture and Cornell University. He has been assistant professor at Cornell since 1951, teaching in engineering mechanics and doing research in the graduate school of aeronautical engineering. Previously he was associated with the Terminal Island Naval Shipyard, Long Beach, Calif., and the Baldwin-Lima-Hamilton Corporation, Hamilton, Ohio.

A native of Chicago, Mr. Johnson has studied at Indiana University, Central College, Chicago, and the University of Glasgow, Scotland, as well as the University of Chicago, from which he holds the M.A. degree in economics. Continuing advanced studies at the University of Chicago, he has been director of the management projects in the Industrial Relations Center, University of Chicago, since 1948, responsible for the management research programs.

In 1952 he served as assistant director of personnel administration at General Mills, Inc., Minneapolis, and in 1947 was a staff member of Robert N. McMurry and Company, Chicago, management consultants.

George A. Sloan: 1893 - 1955

GEORGE A. Sloan, Life Member of the M.I.T. Corporation, noted industrialist and for many years president and chairman of the board of the Metropolitan Opera Association, died in New York City on May 20. He was 61 years old.

As chairman of the United States Council of the International Chamber of Commerce since 1950, Mr. Sloan had been spokesman for American business in matters involving international affairs. His death came a few hours before he was to have been installed as president of the Chamber.

Mr. Sloan was born in Nashville, Tenn., where he was graduated Phi Beta Kappa from Vanderbilt University. He was admitted to the Tennessee Bar, but joined his father in business, a field in which he attained leadership. For more than 25 years he served as a director of a number of leading American corporations.

Mr. Sloan helped to organize the Cotton-Textile Institute, of which he was later president, and obtained improved working conditions for men, women, and children employed by mills. His government appointments through the years were numerous.

Administrative Assistant

THE appointment of Robert M. Briber, '52, as administrative assistant to James R. Killian, Jr., '26, President of M.I.T., was announced today by President Killian.

Mr. Briber, who is the son of Mr. and Mrs. Frank E. Briber of Denver, Colo., prepared for M.I.T. at the East Denver High School and entered the Institute in the fall of 1948. He received his degree of Bachelor of Science, Course XV-B, in June, 1952, and was awarded the degree of master of science in the School of Industrial Management the following year. During his undergraduate career Mr. Briber was president of the senior class; chairman of the Institute Committee and of the Inter-Fraternity Council Judicial Committee.

During the summer of 1952 and part-time until May, 1953, he served as a special assistant to the late Dr. Karl T. Compton in a special study pertaining to industrial research.

Franklin Warren Hobbs: 1889-1955

FRANKLIN Warren Hobbs, a distinguished leader of the New England textile industry and an emeritus Life Member of the Institute's Corporation, died at his Boston home on June 16.

Mr. Hobbs, who was the only manufacturer ever to head both the national cotton and wool manufacturer's associations, was born in Roxbury, Mass., and in 1889 received the degree of Bachelor of Science at M.I.T. After two years as an assistant in the Institute's department of mechanical engineering, Mr. Hobbs entered the employ of the Arlington Mills (now the William Whitman Company, Inc.). Throughout more than 60 years of service he assumed constantly increasing responsibilities, and in 1952 retired as chairman of the board of directors. Since 1930, he had served as board chairman of The Textile Foundation in Washington, D.C. For his leadership in the textile industries, Mr. Hobbs was awarded the honorary degrees of Master of Science by Dartmouth College, Doctor of Science by Middlebury College, and Doctor of Textile Science by the University of North Carolina.

J. Willard Hayden: 1874-1955

JWILLARD Hayden, President of the Charles Hayden Foundation, Life Member of the Institute's Corporation and a member of its Committee on Student Activity, died June 15.

Mr. Hayden was born in Boston in 1874, and was educated at the local public schools and at Pennsylvania Military College. During World War I he was director of demobilization for the Y.M.C.A. In 1937, on the death of his brother Charles, Mr. Hayden severed a long association with the firm of Hayden, Stone and Company in order to devote himself to service as president of the Charles Hayden Foundation. His contributions as administrator of the foundation, established under the provisions of his brother's will, were important in terms of personal, as well as financial, assistance.

Technology's Sailors

WITH their successful defense of the Sir Thomas Lipton Memorial Trophy representing the team race championship and the Morss trophy emblematic of the individual championship of the North American colleges, Technology's sailors climaxed another season of victories in the New England and Eastern Championships. Representing the New England District of the Intercollegiate Yacht Racing Association of North America, M.I.T. met sailors from the Pacific Coast district in the finals, defeating them four races to one on the Charles River Basin. The Pacific Coast team composed of sailors from San Diego State College and the University of California at Los Angeles, won the honor of meeting Tech by a 4-2 victory over the Mid-Atlantic district composed of Georgetown and George Washington Universities. Mid-Atlantic district had won their elimination previously by defeating a Mid-West team 3-0 composed of Ohio Wesleyan and Cincinnati Universities.

The week of June 20 the team traveled to the United States Coast Guard Academy at New London where they successfully defended their National Intercollegiate Individual Championship sailing against the same Midwest and Pacific Coast colleges but with the United States Naval Academy and Princeton University replacing George Washington and Georgetown Universities for the Mid-Atlantic district. These two teams proved themselves to be the strongest competition with Navy scoring 210 points, Princeton 202 points and the M.I.T. sailors total of 217 points.

One more important event remains on their schedule. This tour comes as a return courtesy to Oxford University for their visit to the United States last year where they met many American Colleges in sailing races and visits to private clubs. They lost a year ago to M.I.T. in both the Lipton Cup races and the Denmark trophy at New London but prevailed in nearly half of their matches in this country. The American team will be made up of stars from different parts of the United States and will be captained by Alain de Berc, '55, a French citizen who has spent the past five years in the United States as a student, four of them at M.I.T. His familiarity with European sailing competition while at home during summer vacation, and understanding of the subtleties, protocol, and complications with which international yachting abounds, fits him for this position. He will have as team mates, Commodore J. Nicholas Newman, '56, William H. Stiles, '57, Donald Adams, San Diego State College and Bruce Loring, Rhode Island University, and his younger brother, who attends Stevens Institute of Technology.

The New England Intercollegiate Sailing Association honored M.I.T.'s late Athletic Director, Professor Ivan J. Geiger, through the presentation of a perpetual trophy which bears his name. The new trophy is in the form of a portrait of Professor Geiger mounted on a blonde wood plaque with silver plates and appropriate inscription. The trophy will be a constant reminder of the code of sportsmanship for which Professor Geiger stood and of his services to the North American college sailing organizations.

(Continued on page 500)

BUSINESS IN MOTION

To our Colleagues in American Business ...

This is called a rack. It is fastened to electric light poles to hold wires from pole to pole, and from pole to house. Perhaps you may have noticed racks on poles, but unless your electric company has recently replaced them on the lines in your vicinity you have not seen anything quite like this. It is made of aluminum, instead of galvanized steel, and is assembled almost entirely of extruded shapes.

Naturally you will think that aluminum was chosen in order to save weight, and as a matter of fact, lightness plus strength is a factor. The aluminum rack is five to six pounds lighter, and that is appreciated by the linemen who have to put the rack on the pole after they have climbed it. However, lightness is not the main consideration. Long life is the big advantage. Modern methods of treating poles with preservatives

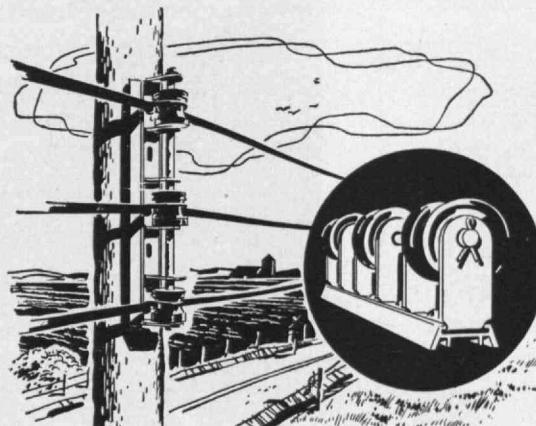
make it reasonable to assume that a pole will last for 50 to 60 years. Now for the first time there is a rack or bracket, as it is sometimes called, that should outlast the pole. As soon as aluminum is exposed to the air, a thin film of oxide forms, and this is a protection against further action by air and rain. As for price, the aluminum rack costs a little more, but this is compensated, many times over, by the increased years of service.

There are some interesting features of design that are worth noting. The extruded shape that forms the

base of the rack is adequately ribbed for strength, and in addition, provides a channel into which the arms are slid after having been notched and bent at right angles. The channel and the arms together take the pull of the wires; the rivets are used just for positioning. Incidentally, the rack has to withstand a total pull of 6,000 pounds. The arms are formed with a slight longitudinal camber or bow and have rounded edges, because linemen pull the wires across them,

and the camber and edges protect the insulation from damage. The rod on which the insulators are threaded is extruded aluminum. One final detail, which is not easy to see in the drawing; the bottoms of the base are toothed, to hold to the pole better.

Revere takes especial satisfaction in this new and superior rack, because the Technical Advisory Service, the Mill, and the customer worked so closely together. There was a joint attack on the problem of developing a product that would not only be better, but could be assembled simply and economically. Suppliers to industry are not only well informed regarding their materials, but glad to cooperate with customers and prospects on matters concerning specification and fabrication. Revere suggests that you call upon your suppliers not only to fill orders, but to place their skill and knowledge at the disposal of your designers and production people.



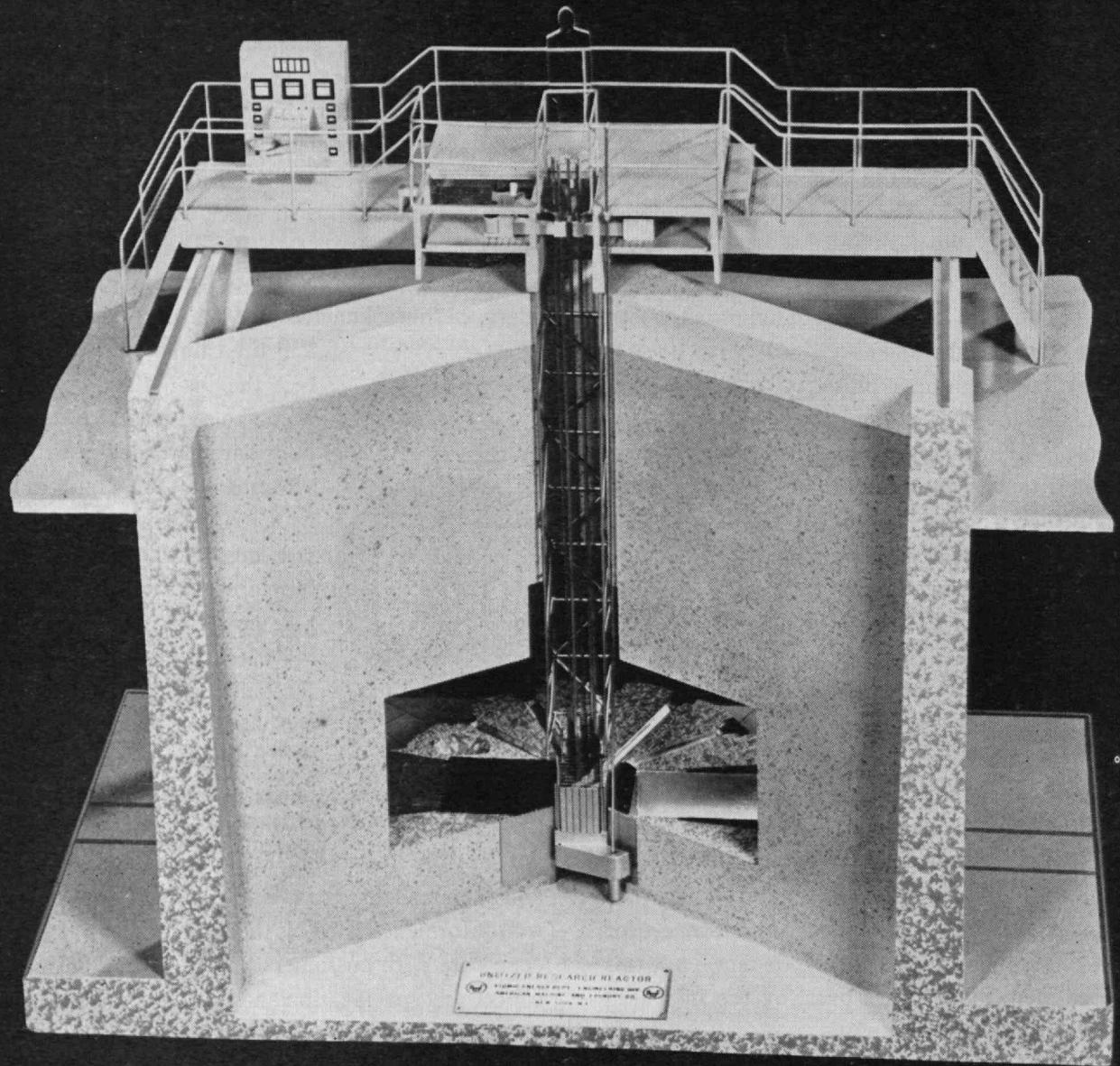
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A LEADER IN NUCLEONICS



Scale Model of AMF's "swimming pool" Unitized Research Reactor (pool and rear shielding cut away)

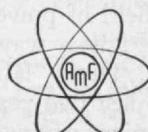
...from design through development to construction

One of the first industrial concerns to enter the highly specialized field of atomic research and development—with many of its engineers having experience dating back to the beginnings of the Manhattan Project—AMF has played a major part in many important and successful nuclear projects.

And its activities today are devoted not only to the completion of a variety of projects already begun, but to the installation, expansion, and improvement of atomic facilities for government and industry alike.

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Denton Massey.....	1924	A. B. Burns.....	1946
S. Auchincloss.....	1927	J. F. McCarthy.....	1946
I. W. Hilliard.....	1932	E. W. Forth.....	1947
R. A. O'Brien.....	1934	R. B. Palmiter.....	1947
H. A. Quinn.....	1934	J. B. Williams, Jr.....	1947
K. R. Rand.....	1934	H. B. Nelson.....	1949
J. E. Talbert.....	1935	C. Ajemian.....	1950
C. M. Graves.....	1936	W. K. W. Chen.....	1951
E. V. Kinsman.....	1936	J. L. DeClue.....	1951
S. V. Cuthbert.....	1937	J. C. Gilmore.....	1951
F. F. Ferrary.....	1937	J. F. Pasieka.....	1951
L. L. Hofstein.....	1938	H. A. Ullman.....	1951
J. H. Brewster III.....	1940	H. P. Zitzow.....	1951
M. Sanders.....	1941	R. A. Boole.....	1952
J. F. Wilson.....	1941	D. A. Plummer.....	1952
B. M. Torrey.....	1942		



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Core and shielding in this AMF Research Reactor are similar to designs developed in AEC laboratories.

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The development of component machinery and mechanisms for atomic reactors, including AMF's manipulator for nuclear materials and general purpose robot for use in radioactive areas.

Design and development of complete research reactor systems, including "heavy water", "swimming pool", and "water boiler" types.

Engineering conceptual designs for power reactor plants for industrial power supply—including AMF's closed cycle "boiling water" power reactor as well as "pressurized water" and "gas cooled" types—and active consultation with several public utility groups investigating this field.

Research and development in the field of "applied nucleonics", including the radiation sterilization of foods.

A continuing program in the field of practical industrial applications of radiation—an example of which is AMF's nucleonic "Microfeed" for exact control of tobacco weight per cigarette, already in use on "Standard" Cigarette Machines.

Specific AMF projects completed or under contract include:

Design and construction of special control rods and remote processing equipment for the Hanford Engineering Works of the AEC.

Design, development, and construction of the complicated control, handling, and processing equipment for the Savannah River Facility.

Construction of an AMF-designed "unitized" reactor of the "swimming pool" type for Battelle Memorial Institute, Columbus, Ohio.

Development of reactor control and handling equipment for the Atomic Power Development Associates, Detroit, Michigan.

Supply of complete AMF-designed "unitized" control units for Oak Ridge National Laboratory.

Design of a "pool" type, "unitized" New York Area Industrial Reactor to be sponsored jointly with representative firms in other leading industries.



THE INSTITUTE GAZETTE

(Continued from page 496)

Aspects of Production

THE entire membership of the Visiting Committee on the Department of Mechanical Engineering met at the Institute for an all-day meeting on December 18, 1954.* The meeting was held in the recently completed Edward F. Miller Room with: James R. Killian, Jr., '26, President; C. Richard Soderberg, '20, Dean of the School of Engineering; Charles E. Fuller, '92, Professor of Theoretical and Applied Mechanics, Emeritus; and members of the Department's Faculty.

Professor Jacob P. Den Hartog, Head of the Department, outlined the Department's organization and undergraduate activities. Discussion was then directed to the desirability of offering an undergraduate course of instruction on Production. Although certain aspects of production techniques appear in the courses in machine tools, as well as in courses taught by the School of Industrial Management, the Institute does not offer an integrated course of study for those whose primary interest lies in this field. Presentations on several aspects of production were made by: Professors John A. Hrones, '34, and Robert W. Mann, '50, of the Machine Design Division; by Professors Milton C. Shaw and Prescott A. Smith, '35, of the Metals Processing Division; as well as by Professors Billy E. Goetz, W. Van Alan Clark, Jr., '42, and Robert B. Fetter, of the School of Industrial Management. The Committee shared the feeling of members of the Department of Mechanical Engineering that good undergraduate training in production methods could be obtained from existing courses of instruction which M.I.T. now offers.

The present requirements for the master's degree in Mechanical Engineering prescribe two courses in advanced mathematics, two in advanced mechanics, and one in heat, with the object of laying a broad scientific foundation without specialization. This program then does not fit the objective of a man who wants education in the mechanical engineering aspects of "production." However, there are available at the Institute a sufficient number of substantial courses in machine design, metal processing, and industrial management to constitute a one-year graduate program. The question was posed to the Committee whether or not it would be desirable for the Department to modify its requirements for the S.M. degree to permit the offering of a course in "Production," not necessarily containing advanced mathematics, mechanics, and heat.

After considerable discussion the Committee came to a unanimous conclusion that the Department should maintain its present high scientific standards for graduate degrees, and give further study to the

*Members of this Committee for 1954-1955 are: Walter J. Beadle, '17, chairman, Redfield Proctor, '02, John A. Lunn, '17, Charles A. Chayne, '19, George H. Burt, '20, Herbert G. Fales, '20, Thomas H. West, '22, John F. Bennett, '30, Lewis K. Sillcox, and Glenn B. Warren.

formulation of a graduate program in Production based on courses of a fundamental character.

In the afternoon the Edward F. Miller Room was dedicated with addresses by John E. Arnold, '40, Associate Professor of Mechanical Engineering, who was responsible for the design of the room and its execution; by Sherman K. Grinnell, '52, a member of the student committee by whose efforts the campaign for the room was started; by Dean Soderberg, under whose administration as Head of the Department the entire development took place; by Professor Fuller, who had intimate personal and professional associations with the late Professor Edward F. Miller, '86; by Thomas H. West, '22, chairman of the Visiting Committee when the campaign for the room was undertaken; by Walter J. Beadle, '17, the present chairman; by President Killian; and by Professor Den Hartog, the new Head of the Department. The Miller Room will greatly enhance the relations between the staff and the students in the Department.

Finally, the Visiting Committee was favorably impressed by the dynamic manner in which the Department approaches its educational problems.

The above report was received for publication in The Review Office on April 25, 1955.

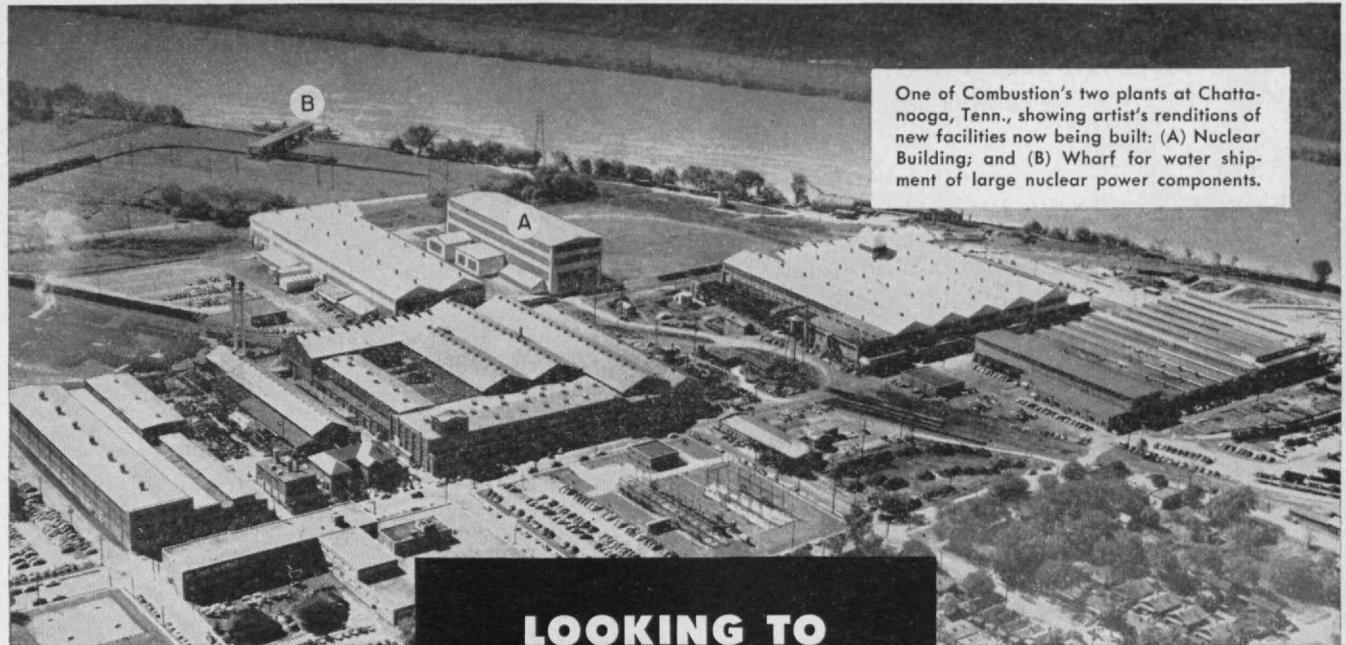
Course VI Study

ALL members of the Visiting Committee on the Department of Electrical Engineering were present at their last all-day meeting at the Institute on December 17, 1954.* In addition, Gordon S. Brown, '31, Head of the Department of Electrical Engineering, and several senior members of the Department's staff, were also present at most of the meeting, as well as James R. Killian, Jr., '26, President, and C. Richard Soderberg, '20, Dean of the School of Engineering.

The Department is in the process of making major changes in its curriculum in which the former options in the fields of electric power, electrical communication, and illumination have been eliminated, and greater emphasis has been placed on electrical science which is fundamental to all phases of electrical engineering. Extensive changes have been made in the Department's laboratories to aid in achieving the newer educational philosophy. Visits were made to selected laboratories in order that the Committee might see how the laboratory work is now being coordinated with the revised curriculum. The laboratory tour also provided the Committee an opportunity to see the transition that had taken place in the type of experiments undertaken by the students, especially in the field of power, where machine operation has largely given way to a study of fundamental concepts. These laboratories have been rebuilt during the last two years and now provide a much more convenient arrangement with more adequate facilities.

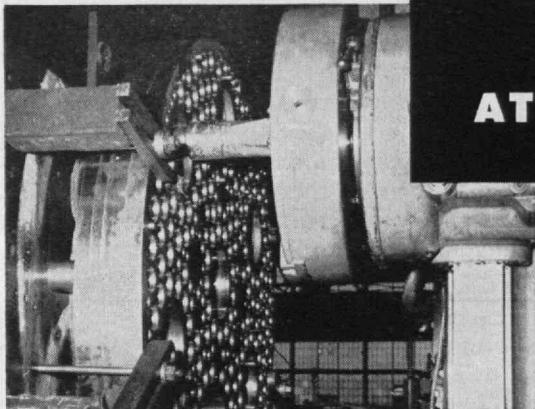
*Members of this Committee for 1954-1955 are: H. B. Richmond, '14, chairman, Francis J. Chesterman, '05, Harland C. Forbes, '23, Max I. Alimansky, '28, Edward J. Poitras, '28, Theodore V. Houser, Alexander C. Monteith, B. Richard Teare, and Dean E. Wooldridge.

(Concluded on page 502)



One of Combustion's two plants at Chattanooga, Tenn., showing artist's renditions of new facilities now being built: (A) Nuclear Building; and (B) Wharf for water shipment of large nuclear power components.

LOOKING TO *our* ATOMIC FUTURE



Part of the nuclear power plant for the submarine, Sea Wolf, in process of manufacture in C-E shops. Precision workmanship is critical.

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Because Combustion took a long hard look at its atomic future years ago, today it is well along in its program for keeping abreast of nuclear power progress. And we intend to stay abreast of this progress for the very good reason that *power is our business*, whether its heat source is fossil, atomic or even solar energy.

How soon nuclear fuel will become economically competitive with fossil fuels has been only one factor in our planning which, from the start, has reflected the view that atomic power was here to stay . . . that it would be of growing importance in our future . . . and that our chief concern should be "how" rather than "when".

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In the past year, we've nearly doubled the technical staff of our Nuclear Power Division, and we expect to maintain this rate of growth for some time to come.

Presently, we are building the huge reactor vessel for the country's first commercial-size nuclear power station — the AEC-Duquesne Light plant at Shippingport, Pa. Last year we

completed manufacture of nuclear components for the prototype of the submarine, Sea Wolf, and we are now well along with the manufacture of this equipment as well as a set of boilers for the Sea Wolf itself.

We have begun construction of a new building at our Chattanooga plant (see upper picture caption) to house special facilities for nuclear work. Already on the site is a 15,000,000 volt betatron for fast X-raying of thick plate and welds. We are also building a wharf on our Tennessee River frontage which will be equipped to handle reactor vessels weighing several hundred tons, permitting water shipment of vessels too heavy for rail or highway. This program is scheduled for completion early next year.

Our already extensive research and development program has recently been augmented by an agreement with the AEC covering design and evaluation studies of large reactors for power stations, small reactors for special application, design of reactor fuel elements and development of fuel element fabrication processes.

* * *

Thus is Combustion preparing itself to participate significantly in the challenging task of applying nuclear fission to the power needs of the future.

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THE INSTITUTE GAZETTE

(Concluded from page 500)

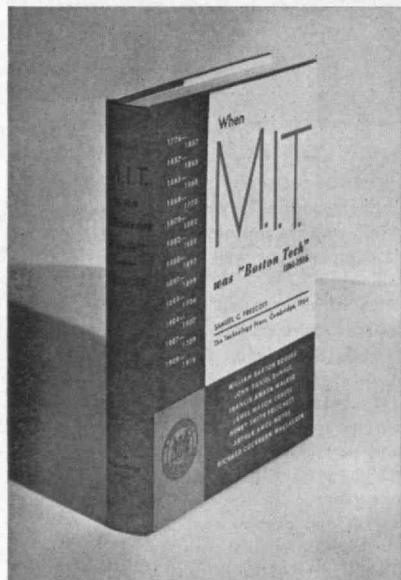
The Committee is aware that the Department of Electrical Engineering is now the largest at the Institute, and that it gives subjects of instruction to nonelectrical students as well as to Course VI students. The Department is also heavily associated with research problems carried on under Project Lincoln for the defense of the nation. It has heavy responsibilities and large requirements.

The effect that the revised curriculum will have on Course VI-A was discussed briefly. The Department has under study a program that will improve and strengthen the integration of the Course VI-A students with the Course VI students. As these are such important matters, the subject was deferred for a full discussion next year.

The greatest portion of the discussion was devoted to the revised curriculum for undergraduates. This new course of studies centering around a broad core curriculum may well prove to be as important as was the pioneer establishment of a course in electrical engineering at the Institute. As the use of electricity increased, so did the categories of specialization until they became an unmanageable complex which led more to a listing of vocations than to the broad concept of engineering based on electrical phenomena. This vocational trend tended to hold captive a body of students for a specific part of the industry, with

no guarantee that they would find employment in their chosen field. Yet, many vacancies beckoned in a closely allied field for which the graduates had not been adequately trained. As Professor Brown so aptly said in his paper before the January, 1955, meeting of the American Institute of Electrical Engineers, an advance copy of which was made available to the Committee: "Options placed undue emphasis on learning the known art of today, rather than understanding the science that would dominate the art of tomorrow." This paper outlines the objectives of the Department and how they are being carried out. The Committee recommends the careful reading of this paper.

It has been the duty of the Committee to see that the desired objectives are reasonable and that the reaction of staff and students to them is healthy. There were, naturally, a few of the staff who found it difficult to part with the option type of program and to substitute the more general core type of approach. Your chairman, who has had the opportunity of studying this evolution during the past three years from a rather close range, feels safe in saying that the staff of the Department have shown real enthusiasm over the change, in spite of the fact that the transition has placed a heavy burden on them. The Committee recommends that the program be pushed forward vigorously, subject to such changes as experience may dictate; and that, as far as is practical, information from the employers of the 1955 graduates of the new course be obtained as soon after graduation as is feasible.



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THE site, too, was chosen with working conditions in mind. It is one of unusual natural beauty — on a hilltop overlooking a large lake — far enough from downtown Boston to enjoy all the benefits of suburban location, yet close enough to be easily accessible.

SINCE it is but a short ride, why not drop out next time you're in the Boston area? We think you'll enjoy seeing the kind of workplace we're building. We'll be there after August 1.

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AND DEPARTING—

(Continued from page 493)

than a quarter of a century. It would be easy and pleasant to recount the major achievements of Mr. Rowlands which were partly responsible for his election as Honorary Member. A more effective presentation can be made by citing — as was done at the presentation ceremony — the evaluation placed upon his work by Edward T. Weeks, editor of *The Atlantic Monthly*. Neither a Technology Alumnus nor a member of the M.I.T. family, Mr. Weeks stated, in an article in the Boston *Herald* of February 18, 1950: "In my judgment the best public relations in the college world over the past 25 years have been those maintained by James Rowlands at the Massachusetts Institute of Technology. Jim has devoted himself untiringly to the proposition that people all over the country are not only willing but eager to understand what M.I.T. is doing.

"He has opened the doors of Tech to writers who wanted to know. Working quietly and usually anonymously, Jim has made it his business to explain to the United States what M.I.T. had contributed to the development of our science and industry, and the enormous part it has played in our national defense. When Tech staged its magnificent inauguration of President Killian with the Churchill speech and the brilliant symposia which followed, Jim was again a quiet force behind the scenes, helping to make the big ideas accessible."

(Continued on page 506)

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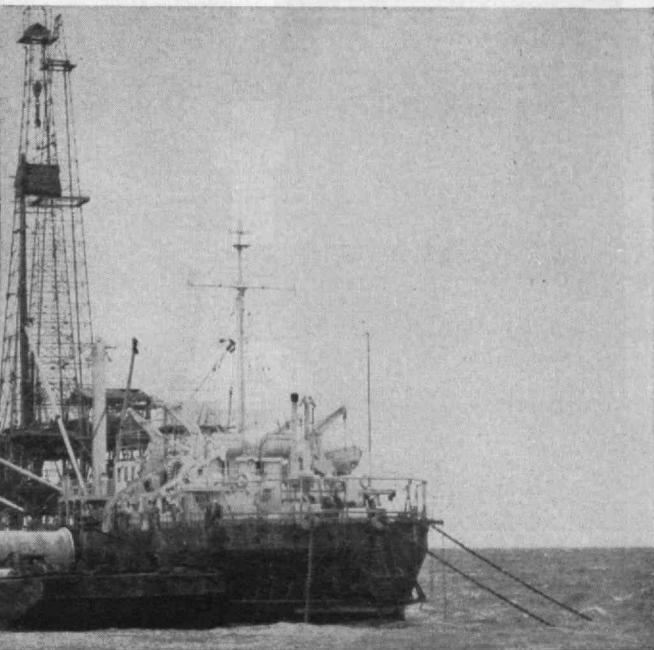


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AND DEPARTING—

(Continued from page 504)

Mr. Ferguson then introduced Robert W. McLean, '05, and John F. Bennett, '30, who made gift presentations for the 50 year class and the 25 year class, respectively. Mr. McLean presented to President Killian a check for \$161,215. For the 25-year class, who left M.I.T. at the beginning of the depression, Mr. Bennett presented a check for \$52,082.38, of which \$20,910 was accounted for by class group insurance policies taken out while members of the Class of 1930 were still students. President Killian graciously accepted both checks on behalf of the Institute, and assured the assembled Alumni that these funds would be put to good use.

Theodore T. Miller, '22, Chairman of the Alumni Fund for the current year — and reappointed to serve for the coming year — reported on the Alumni Fund. He told the audience that 10,700 Alumni had contributed half a million dollars — an amount more than double that in any other year. He also reminded Alumni that an anonymous donor had agreed to equal any amount collected by the Alumni Fund. Accordingly, Mr. Miller was able to report that the Alumni Fund this year would amount to one million dollars. This is a splendid tribute to Karl Taylor Compton, in whose honor the fund was earmarked this year, and also to Mr. Miller and others who took responsibility for administering the fund for the current year.

Next event of the evening was the address given by Dr. Arthur S. Flemming, Director of the Office of Defense Mobilization. In opening his address, Dr. Flemming paid handsome tribute to President Killian who has rendered to our nation service of a high type in connection with classified matters of national defense. Dr. Flemming could not reveal the nature of the work that, during the past has taken Dr. Killian away from the Institute for several months, but he indicated the service was regarded as exceptionally valuable.

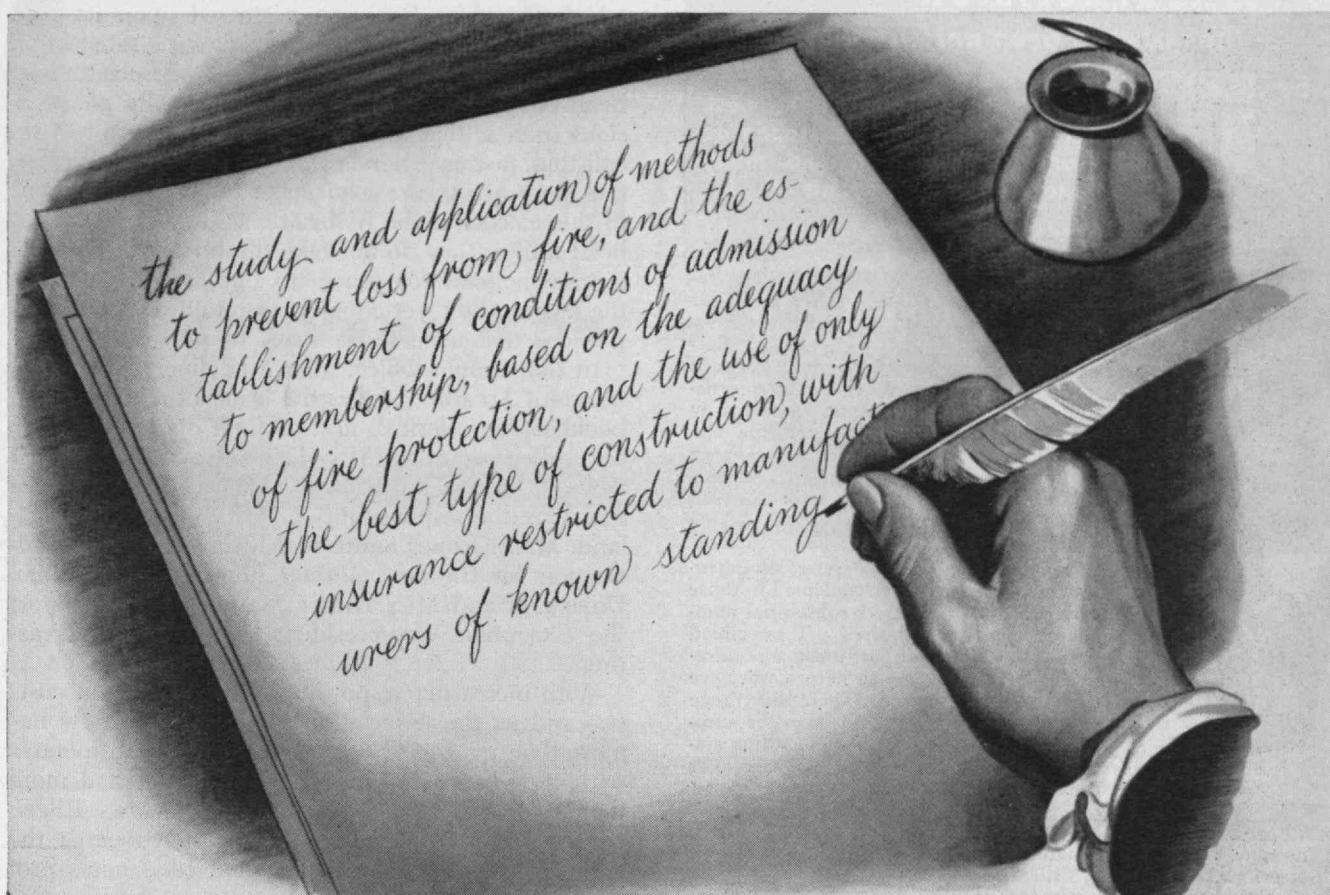
Dr. Flemming also expressed gratitude to the Institute for its superb training of students in science and engineering, and for the availability of public spirited, able Alumni who, in later years, have often taken positions of trust and great responsibility in industry, in government, in education and in research. The essence — if not the exact words — of Dr. Flemming's address, "Is War Inevitable?" is published on page 483 of this issue of The Review.

When Dr. Flemming had concluded his address, President Ferguson spoke briefly of his pleasure in having the privilege of being president of the Alumni Association for the past year, gave profuse thanks to H. E. Lobdell, '17, Executive Vice-president, D. P. Severence, '38, Secretary Treasurer, and Henry B. Kane '24, Alumni Fund Director for the able and valuable assistance they had rendered in making his task the easier during the past year.

Mr. Ferguson then turned over the gavel of his office to Dwight C. Arnold, '27, who spoke with pleasure and humility in taking over the reins from Mr. Ferguson, and who adjourned the meeting at 9:30 P.M.

(Concluded on page 508)

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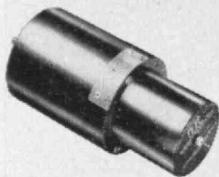
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by



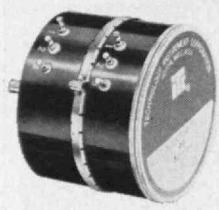
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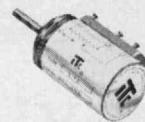
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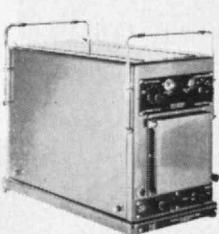
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AND DEPARTING —

(Concluded from page 506)

Those who heard the bounteous words of praise which President Ferguson bestowed upon its paid officers must have felt a warm glow of satisfaction in the knowledge that the Alumni Association so handsomely fulfills its mission. Especially on occasions such as that reported here, it is pleasant to recall that, just as generals alone do not win battles, so too there are others who make major contributions to the success of the Association. They do not sit at head tables; they do not take the bows; they do not initiate policies for others to implement. Theirs is the less exciting, yet equally important, task of doing the jobs that need to be done.

In the Alumni Office, Miss Madeline McCormick, Assistant Treasurer, bears the brunt of administering bookkeeping, clerical, and address operations, with the able support of Mrs. Doris Sears Evans, Miss Irene Walker, and others. Records of the Alumni Fund are the responsibility of Miss Virginia McPartland. Mrs. Eleanor Smith managed records and production for the new *Alumni Register*. Mrs. Lillian Unversagt and Miss Esther Marvin loyally support the Executive Vice-president and Secretary-Treasurer.

With increasing responsibility as production costs rise and as the Association grows, The Review has more than paid its way since 1928; today it operates with the same size working personnel it had more than a decade ago. Miss Ruth King, Miss Eileen Klimowicz, and Miss Evangeline Sferes carry the load for editorial, advertising, and class notes production, respectively.

It is fitting and appropriate to recognize and acknowledge the services of this loyal group. Without them, or their equivalents, there would be no army.

Conclusion

As Alumni and their ladies left their respective banquets at the end of Alumni Day, they could look back on happy hours spent meeting old friends, visiting the new M.I.T., or listening to stimulating addresses. Many took home memories of another class reunion and some, for the first time, had the thrill of being Technology Alumni. These Alumni — and their ladies — all had lived a day sublime, and departing left behind them plans to meet another time.

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TECHNOLOGY OF PEACE

(Continued from page 478)

school system. We are at the same time deeply convinced that the real and fundamental manpower scarcity is a scarcity of quality more than of numbers, and that the problem of providing adequately for the exceptional young people of our time is as urgent and commanding as the problem of preparing for the tidal wave of numbers. In my judgment the under-privileged youngster of our school system is all too frequently the superior and exceptional youngster. In recent years we have achieved a system of mass education which is magnificent in its accomplishment and its extent. We must maintain this system in a state of vigor and we must make sure that we enable it to meet the swelling numbers that result from our population growth. But more than this we must make sure that it has built into it the methods, the ideals, and the people who will spot the able youngsters and will give them special handling so that they have a maximum opportunity to make their contribution to our society. At the present time one third of the top 2 per cent of the graduates of our high schools are not going to college. Some are not motivated; some do not have the means. We must provide the motivation and the means for more of this missing one third to get a college education. We must take every means we can to insure that we realize the full potential of our best minds.

One of the reasons why we have not been doing as good a job here as we might is the fact that we have not given our teachers adequate incentive and status in our public school system and that particularly we have let the teaching of science be gravely weakened since the war. It is estimated that this June, the teachers' colleges and other institutions producing teachers in the nation will turn out less than 250 teachers of physics for our secondary schools. It has also been estimated that the average college training of our teachers of physics in the secondary schools is six-tenths of one college semester.

It is further estimated that we are currently preparing only about half the number of science teachers that we are to need in the next five years. Here is a critically urgent situation that warrants a vigorous and systematic attack. In saying this, I hasten to add

(Continued on page 512)

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MAIL RETURNS

(Concluded from page 450)

I included the statement in a small volume that I recently published: "And very definitely our co-operating task of tomorrow is learning how to train and to guide these combinations of electrons—these elements of human life—that control our desires, our creative power, in a manner that shall be comparable with the guidance that we now traditionally exercise over our more passive skills of memories and our faculties of deductive reasoning."

To show that I am not alone in regarding these *desires, motives, and wills*, which I put together under the phrase of Moral Energies, I would like to quote Doctor John S. Dickey, President of Dartmouth. He regards the purpose of education as: "A. The will to achieve; B. The capacities to achieve."

You will notice that he puts the "will for constructive accomplishment" ahead even of the capacity for the same. Now returning to the Limitations of Technology's program which you described as primarily the development of logical thinking, in my opinion, this would not be quite so bad if it were in reality an effectively just that. According to my observation, however, Technology's discipline is memorizing a vast mass of miscellaneous technical facts, text-book and lecture-notes details and conclusions resulting from bits of so-called logical thinking.

Dedham, Mass.

TECHNOLOGY OF PEACE

(Continued from page 510)

that I am not one of those who feel that the teaching of science should be given such exceptional attention in our public schools that it results in weakening or distorting the emphasis on other fields. This is not the way to solve the problem, but I do think the evidence is clear that we have permitted our science teaching to suffer to a greater extent than the teaching in any other fields in the secondary schools.

Much of our progress in strengthening science at the college level will depend upon our national success in identifying, encouraging, and leading on the superior and exceptional youngsters in their pre-college schooling, but we have responsibilities to do the same kind of thing in our colleges. I do not advocate limiting college education to an intellectual elite. This would not be good for our fluid society. I do advocate diverse kinds of colleges, some of which will see their responsibility to lie in the direction of very high selectivity and a level of excellence that represents the highest achievable standards of our intellectual and cultural life. M.I.T.'s responsibility is of this kind and whether we can still further increase our enrollment depends upon whether such an increase can be accepted without any compromise in these standards of excellence. The maintenance of quality is more important to the nation than our engaging in an academic numbers race with the Russ-

(Concluded on page 514)



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Dr. Laurence C. Hicks	'33	Clifford J. Rounds	'52
Thomas F. Kaveney	'50	Richard P. Simmons	'53

TECHNOLOGY OF PEACE

(Concluded from page 512)

sians, or with any other country. If we can maintain and augment our quality, then we have an obligation to try to admit more students, just as we have already done since the war. I have no sympathy for the smug view of a few private institutions that the problems of increasing enrollments is not for them but for somebody else. I do strongly feel that some of our institutions must make excellence and leadership their primary objectives, and that M.I.T. is one of these.

In picking out these aspects of our financial and educational role and policy, I am not unmindful of some of the other urgencies which press upon us as a great institute of technology serving a world clientele. Survival is the chief intellectual problem of our time, and no educational institution that conceives of itself as indigenous to our times and close to the needs of our society can fail to concern itself with the urgencies of survival. For this reason M.I.T. and its people have undertaken heavy responsibilities, including major undertakings to mobilize science for augmenting the military strength of the free world.

Survival as an intellectual problem, however, involves a great deal more than military strength. It involves the maintenance of a society strong in its economy, its will, its confidence, and its moral purpose. It requires a preoccupation with those matters of the mind and spirit which give a society coherence and its people courage and stamina. It involves freedom of thought along with freedom for each man to realize his fullest potential. Survival involves the cultivation of a core of human excellence and integrity that can stand unafraid and unbowed before the prospect of horror and catastrophe.

As I have tried to suggest, our institution concerns itself with this whole range of intellectual and moral problems associated with survival; and as I observe the abundance and creativeness of its intellectual life, I see not darkness but light ahead.

Although we will face great hazards and even stalemate in the years ahead, the problems of the H-bomb and of the cold war, brutal and unrelenting as they are, need not be wholly insoluble or inevitably catastrophic. In a time of fear and stress, this is the hope that arises from the search for understanding in our great universities. This is the promise and the glory that resides in the ever-renewing creativity of young minds working with freedom and seeking to understand.

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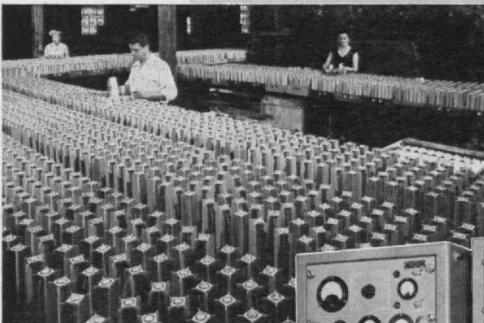


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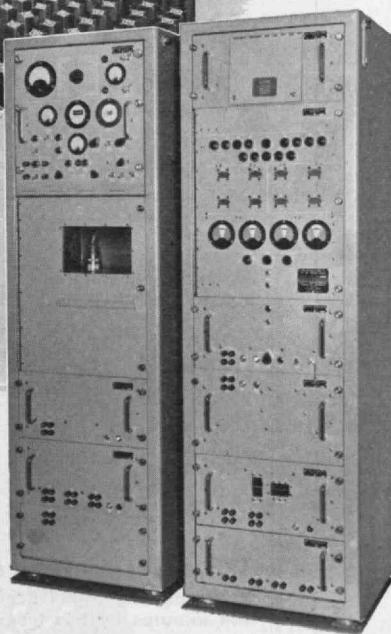
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FREEDOM IS A NOBLE THING

(Continued from page 479)

Freedom is also a noble thing because of what it makes possible. The mind of man may be unconquerable, but it cannot operate without freedom. Surely there is no need to labor that point in a place like this, where the ideals of scientific research are in the very life-blood of the institution. But there are places in the world today — and they are not all of them behind the iron curtain — where freedom of thought and expression is challenged, sometimes bluntly but more often, I think, subtly; and it cannot be too often stated in plain words that without freedom the search for truth is impossible.

Equally impossible is the work of the creative artist unless he lives in an atmosphere of freedom. Much splendid work — in literature, in painting, in music — has been done in protest against tyranny; but, unless I misread badly the actual history of the world, the great works of art have all been produced by men whose souls were free. And the same thing is true in the realm of spiritual values. Only free men — men born free or men who with a great price have bought their freedom — can catch those glimpses of eternal truth out of which all human insight into the world of the spirit and the purposes of God has been fashioned. The new awareness of the ultimate meanings of life, for which our times are so terribly an-hungered, can come only, as the Hindu poet phrased it,

"Where the mind is without fear and the head is held high;
Where knowledge is free:
Where the world has not been broken up into fragments by narrow domestic walls:
Where words come out from the depth of truth;
Where tireless striving stretches its arms toward perfection:
Where the clear stream of reason has not lost its way
into the dreary desert sand of dead habit."

Freedom is a noble thing because of what it shall yet make possible, because it is the indispensable prerequisite for all progress in the things that have substance and color and perhaps even a hint of ultimate value to civilization.

(Continued on page 518)

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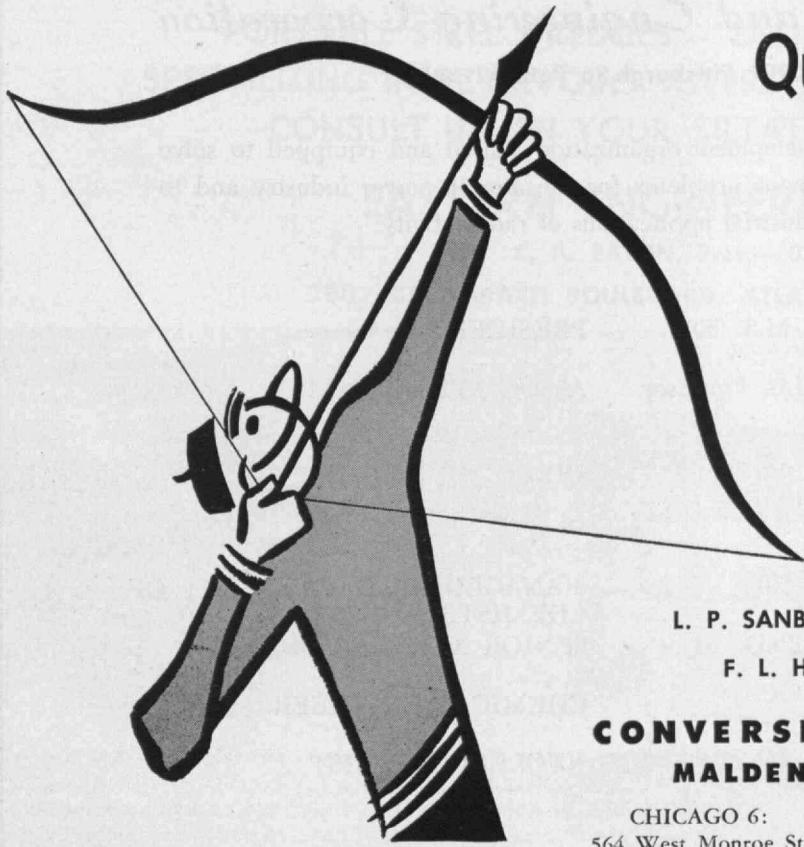
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FREEDOM IS A NOBLE THING

(Continued from page 516)

Freedom is not only a noble thing. It is also a fragile thing. In the passage from "The Brus" which formed the text of "The Canticle of Freedom," the poet tells us "A noble heart may have no ease, Nor aught beside that may him please, If freedom fail." If Freedom fail! Clearly, in the light of what has happened in the world since 1914, this is not a theoretical or remote possibility, but a serious and continuing threat to which all of us and all our institutions are continually and seriously vulnerable.

We have not, in recent years been unaware of this peril; and we have made many strenuous but not very successful efforts to avert it. But it seems to me that we have been strangely reluctant to recognize its real nature.

We have been inclined to center our attention upon the external and superficial causes of the threat to freedom and then to put our reliance upon correspondingly superficial measures to prevent it. The all-important thing about freedom, as I view it, is that it resides, and can only reside, in individual minds and hearts. When it fails, it is because an individual has failed to resist and has surrendered; and the reason for his surrender is that he has not maintained and nurtured the basic philosophical and spiritual life that is the soil in which freedom lives and grows.

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the endless struggle within their own souls and, in their weariness and discouragement fall under the spell of some specious promise of an external authority that offers an easier way of life. Their faith in freedom, like the seeds that fell upon stony ground and sprang up quickly, has no depth of root; and just because it has no firm hold upon the soil, withers away in the heat of the sun.

If it is not to fail, freedom must be rooted and grounded in the deepest beliefs and convictions of the soul about ultimate things.

Either freedom is one of the things that the very nature of reality itself makes possible, and ultimately necessary; or it is not. If we believe that it is, we have a firm and deep foundation for our confidence in the practicability of gaining and keeping it; if we do not so believe, then all we can do is to tinker at the external and more or less mechanical expressions of a freedom that has no substance and no trustworthy durability. Actually, such a freedom is not worth the effort to win or retain; and much of the cynical, disillusioned defeatism of our time is due to this fact. Only freedom that human reason can regard as inherent in the texture of the universe — or, to put it in simpler terms, only freedom that is implicit in our faith in God — will justify our efforts to make it a living and permanent part of the human enterprise. To prevent the loss of freedom, in our time or in any time, our faith in its value and its availability must be nurtured at every point and reinforced in every crisis by religion.

(Concluded on page 520)



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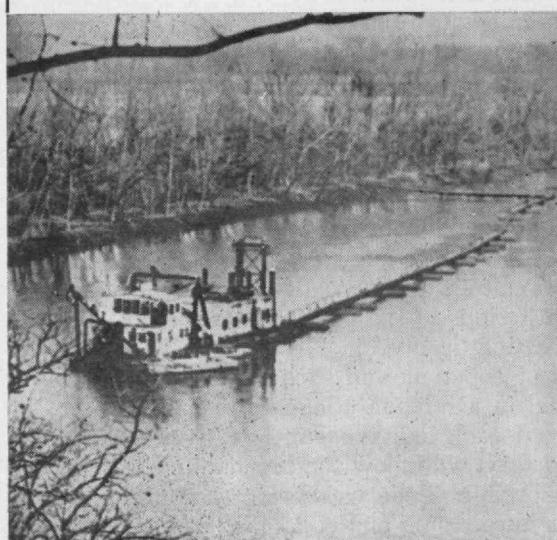
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FREEDOM IS A NOBLE THING

(Concluded from page 519)

"By religion;" but if one is to make any such claim for religion, at this point in history and before such a company as is assembled here, it is imperative that one should at least try to make clear in what sense that much misused word is used. Certainly I am not thinking of any *one* of the various forms which religion takes in our modern world. It would be nearer to the truth to say that I am thinking primarily of the faith that is common to *all* the high religions of our time — Judaism, Christianity, Islam, Buddhism, and the others, including that form of religion that used to be called "the religion of all sensible men." But that also is not a real answer to a fair question. Perhaps a few sentences from Professor Paul Tillich's contribution to the Radio Symposium in honor of Columbia University's 200th Anniversary — sentences lifted, I hope not unfairly, from their context — may come closer to a satisfactory answer: "Religion is not a special function of man's spiritual life but it is the dimension of depth in all of its functions." "Religion, in the largest and most basic sense of the word, is ultimate concern." "Religion is the substance, the ground, and the depth of man's spiritual life." And, in the final paragraph of his address, Professor Tillich speaks again of religion's "true place in man's spiritual life, namely, in its depth, out of which it gives substance, ultimate meaning, judgment, and creative courage to all functions of the human spirit."

In some such sense, religion must return to the minds and hearts of educated men if we of this, and the succeeding, generation are not to fail in our efforts to keep the freedom gained for us by our forebears and predecessors, and — if we dare to lift our sights to that great height — possibly enlarge its borders and deepen its hold upon men's souls throughout the world. Freedom, as we have good cause to know, is a fragile thing; but it is also a noble thing. Those who go out into the world today from our universities should be the best-equipped of us all to appreciate its nobility and reinforce its fragility with courage, sound reason, and that ultimate concern which is religion.

Here in the Institute you have been held together in President Killian's words — "by a humane and tolerant spirit of mediation, reconciliation, and reverence for the individual, a community governed by a passion for truth, freedom of inquiry and a preoccupation with ideal aims . . . a community generous in its opportunities to live and let live, a community where men of many faiths and backgrounds are free to interact on each other, a community committed to the ideals of professional service, of ministerings to the public, of advancing learning and creating beauty."

Out of experience in such community all that is essential in a religion adequate to our time can be drawn, if each individual in loyalty to his own inherited faith will allow the broadening and deepening fellowship of the worldwide community, to kindle his imagination and enlist his devotion.

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THE MARCH OF MIND

(Continued from page 481)

Yet this is only part of the picture. There remain in the world two main types of political and social organization. One is represented by the parliamentary democracies, in Western Europe, in the British Commonwealth, and in the United States. In economic terms this one is based on the controlled free enterprise (or "capitalist") system. The other is the Communist organization of society based on political regimentation and Marxist economics. The Communists have a theory, that according to the "laws of history," the "capitalist" system will, in the long run, and allowing for periods of what they call co-existence, collapse through its own contradictions. Their mission in life is to hasten this collapse.

We in the West are less addicted to theories of history. But there is plenty of evidence that the advances we have made are in fact mitigating the defects of our society, and gradually bringing about better relations, both between classes within the nations of the Western world, and also between those nations themselves. It is this "position of strength," technical, social and political, which, in the opinion of my government and also yours, has been another factor in bringing the Russians to change their diplomatic approach and, seemingly, to contemplate a reduction of international tension. This position of strength has only been attained by a great deal of hard work in the West, in both the scientific and the political fields, and we shall not long retain it if we persuade ourselves that we have achieved enough now, and can relax our efforts. This is not the only aspect of the competition between the West and the Communist world. Even if our best hopes are realized and we are able to work out arrangements for ensuring a more secure peace, there is no doubt that the eyes of many nations, and particularly those who were recently assembled at the Afro-Asian Conference to which I have referred—the uncommitted third of the world, in fact—are watching the rival merits of the two systems. Which, they ask themselves, is more likely to give them the economic, technological and administrative assistance they need, and provide the pattern for their own development and progress? On the answer that they find to this question, much will depend, including perhaps the balance of power between the Communist and the free worlds.

(Continued on page 524)

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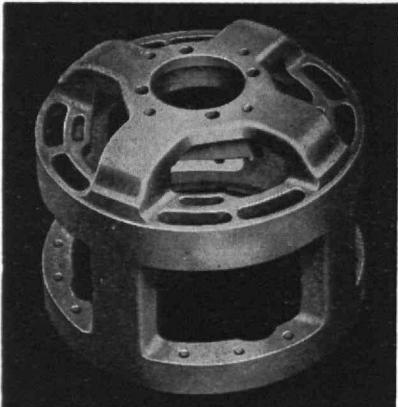
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THE MARCH OF MIND

(Continued from page 522)

Here, then, is a double challenge; to you in the United States, and to us in the British Commonwealth above all others; because we dispose of the greatest resources and influence; because there is, I believe, between us a special bond both in policy and in action. In the first place we must somehow hammer out a sound basis on which the two great opposing groups of powers can live and let live without fear of attack or aggression. Some say that the Communists will never accept such a basis of understanding. But it is and must be our purpose to make the attempt. And it is my opinion that we have in recent months moved a definite and encouraging stage on the long and difficult road to its realization. The other half of the challenge is something which requires no less ingenuity, patience and skill. We must muster the technical and political intelligence, the initiative, and the wisdom, needed to improve our own society, both in its control of material things and in harmonizing the social consequences of this increased control. We must so organize our own economic life and lay out our resources — human, material, intellectual and moral — that our system not only keeps on improving, but will be more satisfying and more worthy of emulation.

This is where the Class of 1955 at M.I.T. comes in. It is not possible any longer to deal with problems such as disarmament and economic development without the closest meshing of political skill with scientific knowledge, of technical proficiency with administrative talent. The first requirement is, of course, to produce a sufficient number of adequately trained people and to achieve this we need a sufficient number of adequately trained teachers. The Soviet Union, and indeed the whole Communist world, does not at present possess the same technological resources, the same numbers of trained people, as does the West. And so they are concentrating great efforts on training the engineers and the scientists they need. They are trying to ensure that, in all fields, but especially in the vital subjects that particularly affect military power, their Institutes of Technology turn out young scientists who will be a match for our own, both in numbers and in ability. Now this is a vital matter for us, and few understand this better than you at M.I.T.

Moreover, today, if the objectives which we have set before us are to be attained, we need not only trained people in sufficient numbers and of good quality: we need more than ever a partnership between the statesman and the scientist, between the technologist and the administrator. Personally, I could not have performed the diplomatic duties which have been laid upon me in the last ten years unless I had acquired at least an elementary knowledge of modern physics and their application. And there is a corollary to this. The scientist and the engineer, in the modern world, needs to have at least a working knowledge of administration, of negotiation, and of politics, while remaining free of course

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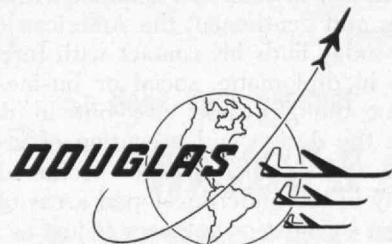
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THE MARCH OF MIND

(Continued from page 524)

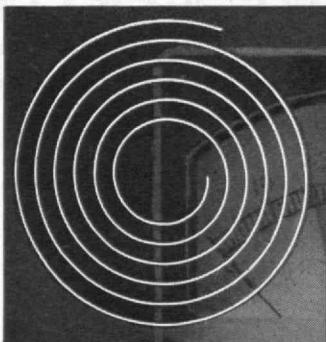
to assert his independence of thought and enquiry. The further the scientific revolution proceeds, the more often scientific questions will form the stuff of international negotiation and national politics. I give, as an example, the conference on the peaceful applications of atomic energy, which is going to meet at Geneva this coming August. Scientists will then gather to discuss matters which are in form technical and scientific but which will have the most far-reaching political and economic repercussions.

No matter how specialized or how apparently academic the subject matter of an international meeting may be, national prejudices and international frictions lie close beneath the surface. It is the paramount duty of the scientist, as of the diplomatist, in conclave with his colleagues from other countries, to see that they do not break through, or to mitigate the consequences if they do. And here let me warn you against the notion that science is a matter for experts, but that international negotiation is something that any layman can conduct without training.

Ladies and gentlemen, the American or the Englishman today finds his contact with foreign peoples not just in diplomatic, social or business relations, important though these are; but in development work, in the design and execution of great projects overseas, and in what is called technical assistance, especially in the underdeveloped areas of the world. A modern scientist or engineer is just as likely to be summoned to Bangkok or Nairobi as to Pittsburgh or South Bend. And if he is interested in, say, irrigation or hydro-electric power, he will soon learn that the utilization and control of water can be more than a cause of friction between two counties, or even two States of the Union: it can be a major international issue, if the water is that of the Nile, or the Indus, or the Jordan.

Most of you here I believe are graduating from schools of engineering and of science. A particular responsibility will rest upon you as citizens of the most powerful nation in the world. It is for this reason that I want to impress upon you the need, not just for proficiency in your own chosen line, but for awareness of, and participation in, political and economic activities, not only national but international. You may all have your part to play, your con-

(Concluded on page 528)



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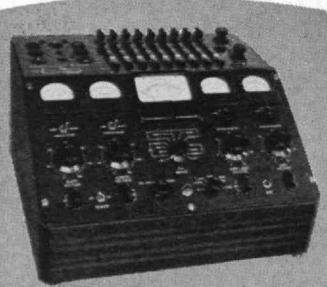
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THE MARCH OF MIND

(Concluded from page 526)

tribution to make in these wider fields of human endeavour.

The call is urgent, the need is great. A determined effort is demanded, not only from you here today, but from all those who are graduating this year in science and technology in the United States, in the Universities of Britain, of Canada, and the other nations of the Commonwealth. It is a combined, sustained endeavour at which we must aim.

"Give all thou canst./High Heaven rejects the lore/
Of nicely calculated less or more."

In this spirit let us go forward together to the next phases of the scientific revolution; to the next staggering posts on the march of the mind. It is not only in science that we must advance; it is in the application of science to the widening of our horizons, to the elevation of our habits of mind and of thought. We must seek a new synthesis, we must constantly strive to bring our scientific progress into harmony with our social objectives, with our moral and religious values. For it is from these, in the final analysis, that our civilization draws its validity and its strength.

IMPACT ON THE LIFE SCIENCES

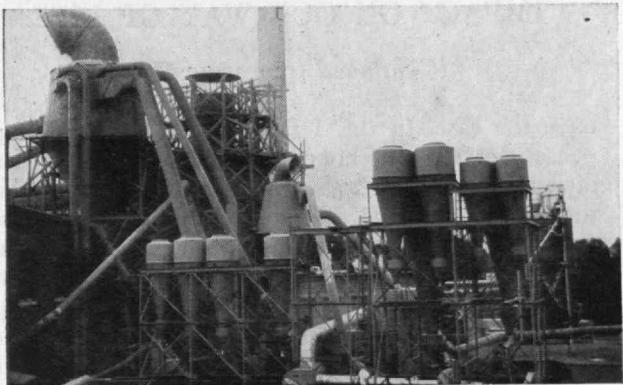
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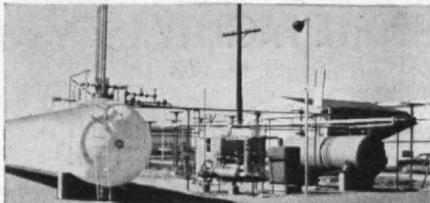
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IMPACT ON OUR WAY OF LIFE

(Continued from page 475)

once the case. In this I find no real danger of appeasement without honor. Rather I find hope that men may yet learn to solve their problems without resorting to force. Until this becomes the rule, we must continue to speak with a firmness that is born of the knowledge that we seek justice and peace for all men and backed by the knowledge that if force be needed, we shall not be found wanting. The atom may well be acclaimed the instrument whereby wars are outlawed in the days to come. Fervently we should pray that this becomes a reality.

With respect to our internal economy, it seems clear that the exploitation of the peaceful atom will involve the development of new and significant relationships between government and industry. What these will be no one can say now. But "regulation" and "licensing" are becoming common place words in atomic energy jargon. It is important that the best interests of *all* the people be served in the industrialization of the atom.

Turning to the international scene and the usefulness of the atom as an instrument of foreign policy we find ourselves confronted with an interesting situation. One often hears the question asked — when will power generated through the use of nuclear fuels replace power generated through the use of conventional fuels? The question can be answered rather simply. For a long time to come power will be supplemental power. It will dominate the power field only when it is cheaper than conventional power generation and when the existing power plants are retired from service by reason of age or obsolescence. But in the question there seems to be some suggestion that when atomic power does replace conventional power something new and different will have a great effect on our lives. As a nation, we have utilized power to supplement and to replace the physical exertions of men. Power generated from nuclear fuels will do this just as well but no better than is the case with conventional fuels. Stripped of its glamor, nuclear power will further extend our capacity to substitute mechanical energy for human energy. There can be no question but that nuclear fuel assures the continuation of our type of mass production economy for generations and perhaps centuries to come. And more importantly, it should make

(Continued on page 532)



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IMPACT ON OUR WAY OF LIFE

(Continued from page 530)

available to power hungry areas of the world one of the most basic ingredients of a material prosperity.

But are there not other aspects of this matter that should engage our thoughtful attention? If we could export today completely packaged nuclear power plants, would not the availability of such plants to one of the world's backward and power hungry nations gain for us additional friends in the battle for men's minds? At first glance I am sure we would agree that here is a powerful tool for winning the peace. And so it is, but I wonder just how much of the industrial revolution's evolutionary aspects a nation may avoid. The availability of power in itself is not enough. Along with it must go other elements in a machine economy — raw materials, a market for goods, an appreciation of the value of the individual and the desirability of relieving him of tedious, repetitive, degrading work, and most of all, education and development of desire to improve our environment. There is a market here for more than nuclear reactors. The market is for the export and intelligent employment of the best and basic ingredients of our American way of life — freedom, initiative, ingenuity and faith in the individual. A washer and dryer are of no value if hunger stalks the land. There is an awakening of peoples throughout the world to the desire for independence and all that it can mean. We can help and should help such peoples with technological and educational programs — programs aimed at helping them to help themselves — not at telling them that if they will do as we do, their problems will be solved.

But the availability of power from the atom should enable backward peoples to progress as rapidly as their own development as a responsible community will permit. Thus the atom may well prove to be a catalyst of importance to all the world in its singular role of easily transportable power. It appears then that we may possess a unique and powerful instrument of foreign policy.

Perhaps the most honest approach to this subject is to admit that one can only conjecture about the real and lasting effects that atomic energy will have on our way of life. The crystal ball may help some — but of one thing we can be certain — the atom was split by men and the energy thus released will be

(Concluded on page 534)

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IMPACT ON OUR WAY OF LIFE

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controlled and directed by men — either for good or for evil. The knowledge that such great destructive power is available already has induced the exercise of patience and diplomacy of a high order in government circles. To maintain the peace — even though it be an uneasy peace — will require that we recognize the increasing interdependence of men and nations economically, socially, and politically. The preparation of men who will meet and discharge the responsibilities of this atomic age is the great challenge to our educational institution today. The evidence that this challenge will be met by your own great institution — Massachusetts Institute of Technology — is both impressive and reassuring.

BENISON FROM FRIENDS

(Concluded from page 484)

he does not understand. When thus perceived and carried forward, and when not misused for ignoble ends, science is a major means for present-day Athenians to make gentle the life of mankind. This benign nature of science was eloquently personified by the late Albert Einstein. A skyscraper in the small cluster of towering minds produced by our civilization, he was also a rare human being in his gentleness and his saintliness. Still another scientist who used science superbly to make gentle the lot of mankind was our own Karl Compton.

The concluding wish of this benison and benediction is that you will couple with a resourceful, ambitious career of achievement a moderating sense of the simple satisfaction of running the race. There used to be inscribed above a now-dismantled gateway to an old M.I.T. athletic field these lines of our fellow alumnus, the late Gelett Burgess (who wrote of the purple cow): "Not the Quarry, but the Chase/ Not the Laurel, but the Race/ Not the Hazard, but the Play/ Make Me, Lord, enjoy alway!" In a day when mottoes are out of date and sentiments are inhibited, this inscription still seems good to stand above your gateway from college to a career. With these sentiments of felicitation, affection, and delight, and cherishing your continuing affiliation with this company of scholars, we bid you Godspeed and farewell.



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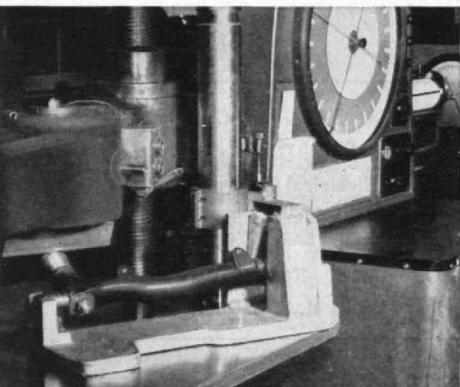
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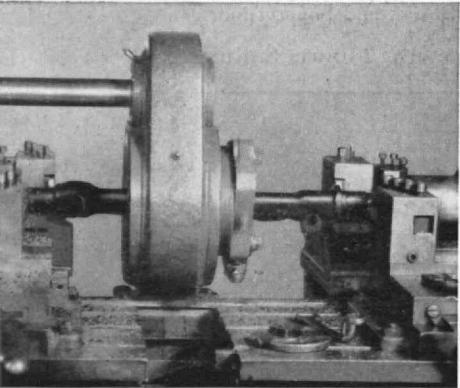
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Alumni AND Officers IN THE News

Gold Medal Group

The Refrigeration Research Foundation's Executive Committee has authorized the establishment of the Samuel Cate Prescott Fellowship for graduate study in commodity refrigeration in universities in this country and abroad. The fellowship was named for SAMUEL CATE PRESCOTT'94, M.I.T. Professor Emeritus of Biology.

JEROME C. HUNSAKER'12, Professor Emeritus of Aeronautical Engineering at M.I.T., received an honorary doctor of science degree from Adelphi College.

RAY P. DINSMORE'14, Vice-president in charge of research and development for Goodyear Tire and Rubber Company, has been chosen to receive the Charles Goodyear Medal for 1955 by the Rubber Division of the American Chemical Society.

FRANK L. BRADLEY'18 and CROSBY FIELD'20 received awards from the metropolitan section of the American Society of Mechanical Engineers for professional contributions to the public welfare. Mr. Bradley is engineering manager of Forstmann Woolen Company, Passaic, N.J., and Mr. Field is president of the Flakice Corporation, Brooklyn, N.Y.

OSCAR H. HOROVITZ'22 was awarded a first prize by the Institute of Amateur Cinematographers, Ltd., for a documentary film of the restored Virginia town, Williamsburg, entitled "Colonial Williamsburg."

JULIUS A. STRATTON'23, Vice-president and Provost, M.I.T., was awarded an honorary degree of doctor of engineering by the New York University College of Engineering.

GORDON BUNSHAFT'33, was chosen winner of the first prize in architecture by The National Institute of Arts and Letters. Mr. Bunshaft is the designer of

Lever House and the new glass-walled Fifth Avenue office of the Manufacturers Trust Company, N.Y.

ROBERT B. WOODWARD'36 has been chosen Harvard University's leading contributor to science and the benefit of mankind in 1954-1955. The University announced that the chemist was the winner of the newly established George Leslie prize of \$1,000. The prize is given every two years to the man at Harvard who "has by research discovered or otherwise made the most valuable contribution to science, or in any way for the benefit of mankind."

JOHN H. TINLOT'43 has been awarded a Guggenheim Foundation fellowship, one of the highest honors in the academic field. The award is for the year 1955-1956, to enable Dr. Tinlot to do research under Professor Louis LePrince-Ringuet at the Ecole Polytechnique in Paris.

E. CALVIN JOHNSON'49, electronics research engineer for Bendix Aviation Research Laboratories, has been awarded the Engineering Society of Detroit's annual award of an outstanding Young Engineer for 1955. The award is made each year to a young engineer who the Society feels is outstanding not only in his job but in his initiative, background, and "off the job" activities.

Progressive Promotions

JOHN W. NICKERSON'09 has been named to a five-member committee to advise Secretary of Labor James P. Mitchell on labor-management problems in the field of atomic energy.

M. M. HUBBARD'29 has joined with Mycon Manufacturing Company of Pasadena, Calif., to found a new electronic enterprise in the Cambridge, Mass., area. The subsidiary firm of which Mr. Hubbard will be president, will be named

Hycron Eastern, Inc., 75 Cambridge Parkway, Mass. The new company will design, develop and manufacture electronic equipment. The following M.I.T. Alumni are connected with the enterprise: A. J. Poté'26, M. A. Wall'50, DAVID I. KOSOWSKY'52, J. L. BURKHARDT'51.

JAMES B. FISK'31 has been elected executive vice-president of Bell Telephone Laboratories.

FREDERIC W. NORDSIEK'31 has been appointed Executive Officer, Research Department, American Cancer Society.

THOMAS A. LANE'32 has been made a Brigadier General in the United States Army Engineers.

MERRICK E. WHEELER'34 has been elected to the Board of Directors of the Boston and Maine Railroad.

GEORGE S. TRIMBLE'36 has been appointed to serve on the subcommittee on stability and control for the federal government's National Advisory Committee for Aeronautics for the year 1955.

WILLIAM B. BERGEN'37 has been elected executive vice-president of The Martin Company.

BRIGADIER GENERAL KENNETH E. FIELDS'38 has been named general manager of the Atomic Energy Commission.

HAROLD A. MCCRENSKY'38 has been elected a vice-president of the New England division of Bruce Payne and Associates, Inc., management consultants.

C. A. STOKES'40 has been elected to the Board of Directors of the Industrial Research Institute.

HERBERT W. STEVENS'42 has been selected as planning director of Cincinnati, Ohio, by the City Planning Commission.

WILLIAM J. DUFFY'45 has been appointed vice-president of the Queen City Typesetting Company, Cincinnati, Ohio.

Obituary

CHARLES M. WILDER'85, May 16.^{*}
ARTHUR T. CHASE'86, May 5.^{*}
DAVID WHITING'92, February.^{*}
WALTER V. BROWN'94, March 18.
WILLIAM R. BURROWS'94, March 2.
WILLIAM L. WOOLLETT'94, February 12.
THOMAS M. LOTHROP'95, Date unknown.^{*}
FRANK B. MASTERS'95, March 25.^{*}
CHARLES K. CUMMINGS'96, January 18.^{*}
WALTER E. CURRY'96, March.^{*}
JOHN R. MACOMBER'97, May 11.^{*}
EMMA LOOTZ ERVING'99, February 23.
EDMOND T. STEWART'99, May 11.
SULLIVAN D. JONES'00, January.^{*}
PHILIP F. RIPLEY'00, April 25.
CLINTON D. THURBER'00, March 20.^{*}
CHARLES H. DENNISON'01, March 15.
EDWIN T. ROBBINS'01, March 15.^{*}
GEORGE H. FRENCH'02, February 13.

WALTER W. WHITEHEAD'03, February 26.
PAUL N. CRITCHLOW'06 January 2.^{*}
EDWIN D. A. FRANK'06, April 28, 1953.
RALPH H. HALL'07, September 30.^{*}
SELDEN E. ROCKWELL'07, March 13.^{*}
WILLIAM J. MCALIFFE'09, April 15.
LEWIS C. BENNETT'09, March 28.
LEWIS H. JOHNSON'09, May 12.^{*}
ROY H. ABBE'10, May 6.^{*}
DANIEL W. GIBBS'10, April 20.^{*}
J. BURLEIGH CHENEY'11, April 21.
NORBERT B. ENNEKING'10, 1953.
JOHN M. FITZWATER'10, March 21.^{*}
ROY E. HARDY'14, May 11.
LEO B. MILLER'15, May 21.
CHARLES W. NOYES'15, March 31.
WALLACE S. THOMAS'15, January 1.^{*}
JOHN N. BURFORD'16, April 3.^{*}
CHARLES H. CHANDLER'16, October.
ELMER L. W. BARRY'21, December, 1950.^{*}
WALTER W. FIFE'21, April 22.^{*}

EDWIN J. ALLEN'22, April 3.^{*}
ERNEST F. STOCKWELL'22, March 9.^{*}
OLE I. VOLD'22, December 6.
JOHN W. COFFEY'23, March 8, 1950.^{*}
CHARLES P. BOYD'25, April 21.
ROBERT W. LEAROYD'25, April 18.^{*}
PRESTON M. PUTNAM'25, Date unknown.^{*}
FREDERICK M. RICE'25, May 7.^{*}
CLEMENS L. HORST'29, November 18.
GEORGE F. SCHULGEN'30, February 17.^{*}
AGNEW A. TALCOTT'32, March 23.
CHARLES J. ALBA'33, April 9.
VERNON G. GATTENBY'33, January 31.^{*}
FRANKLIN H. LOBDELL'34, February 9.
JOHN J. FERGUSON'37, March 8, 1954.^{*}
WILLIAM R. SCHULER'40, May 9.
DEXTER R. WELLS'42, April 3.
CHI-TEH WANG 10-44, April 22.
WALTER E. CASEY, JR.'51, May 11.
RALPH H. COOPER'52, April 21.
JOHN H. BROADFOOT'53, January 29.
* Mentioned in Class Notes.

News from the Clubs and Classes

CLUB NOTES

Boston, Mass.

The final meeting of the 1954-1955 season of the Boston Luncheon Club was held on Thursday, May 19, 1955, at the Union Oyster House. Attendance was 69. Since this was the annual meeting, elections were held and the following officers and members of the Executive Committee were chosen to serve during the coming year.

Chairman: Vincent T. Estabrook'36; Vice-chairman: Frederick N. Dillon, Jr., '22; Secretary-Treasurer: Donald A. Hurter, 6-46; Executive Committee: The officers above, and Chenery Salmon'26, Cedric Valentine'26, C. Vincent Vappi'48.

Professor Dean A. Fales'14, of the Department of Mechanical Engineering, spoke on "Automobile Style, Power, and Safety." — VINCENT T. ESTABROOK'36, Secretary, B. Standish Ayer and McKay, Inc., 50 Congress Street, Boston 9, Mass.

Buffalo, N. Y.

The annual spring meeting of the M.I.T. Club of Buffalo was held at the Buffalo Yacht Club on May 17. A buffet dinner was served to 43 members including a delegation of eight Alumni from Niagara Falls who came for the purpose of considering the possibility of consolidating the Niagara Falls Club with Buffalo.

The annual election of directors resulted in the following Alumni being chosen for a term of three years: Whithworth Ferguson'22, Thomas H. Speller'29 and Richard S. Paul'52. Following the business meeting, Mr. Robert Gibson, field engineer with the Republic Steel Corporation gave a beautifully illustrated talk entitled "Red Gold," which was an intriguing account of the Laborador Iron Ore Development. — BENJAMIN C. BUERK '30, Secretary, 315 Grote Street, Buffalo 7, N. Y.

Cleveland, Ohio

The final meeting of the M.I.T. Alumni Association of Cleveland current season took place on May 19, 1955, at the Cleveland Clinic. The meeting was arranged in order that we might visit the research department of the Clinic. The two-hour guided tour of the Clinic's research facilities was led by Irvine H. Page, Director of Research, and provided a most interesting and exciting opportunity to observe a modern medical plant in active operation.

The meeting was preceded by the usual social hour and by a splendid steak dinner in the staff dining room of the Clinic. A brief business meeting was held prior

to the program. Alan Gould, chairman of the nominating committee, reported that, after diligent search through the files and examination of the constitution, the committee had determined it had no work to do, since there were no officers to be elected this year. President Bill Robinson '24 announced that our executive vice-president, Fred Reuter'38, had been compelled to relinquish that position because of the press of other duties, and that the executive committee had appointed Floyd Stewart to complete Fred's term. Fred's services as vice-president will be missed, and we appreciate the time and effort he has given; we are also happy to have such a capable replacement as Floyd.

Lew Fykse'41 reported for the scholarship committee that at its annual meeting to interview scholarship applicants, 42 young men who had been accepted for admission at M.I.T. were interviewed. The committee felt that the quality of the men interviewed was up to the standard of previous years, and its task of selection was extremely difficult. The \$900 regional award was made to Carl Neu of Newark, Ohio. The \$500 award of the Cleveland group was given to Dwaine Smith, of Elyria, Ohio, who will also receive a supplementary award of \$400 from M.I.T. Several additional awards ranging from \$100 to \$400 were also made. These awards were given to: George H. Toler, Walter T. Brown, Jr., Michael J. Hough, Harold A. Hovey, Paul A. Schmid, David A. Schuenemann and Gerald D. Slawekci. We wish to record our genuine gratitude to the Cleveland Clinic Foundation and to Dr. Page for their kindness and courtesy to us and for permitting us to make such extensive use of the Clinic facilities. — HERBERT J. HANSELL'46 Secretary, 1759 Union Commerce Building, Cleveland 14, Ohio.

Central Pennsylvania

Under the shattering impact of spring, the M.I.T. Club of Central Pennsylvania shook itself from its two year slumbers and held a meeting at the Harrisburg Y.W.C.A. on Tuesday evening, April 26. A group of 34 members and guests broke all recent attendance records, and found the meeting worthwhile in the form of an excellent dinner and an entertaining program. Our own Harold Spaans'30 presented a discussion and demonstration entitled, Speech, Sound, and Hearing. The group response was excellent, and Harold was being bombarded by questions with no end in sight when your scribe found it necessary to head for bed. It always seems possible to meet a neighbor you didn't know before at these meetings. Pleasant as this is, a move is underway to publish a local group directory. All of you Beavers within the area are urged to make sure your own records at the Institute are up-to-date if you wish to

participate in this. And so the Club slides back into its alternate hibernation and estivation, with the next meeting scheduled either at the call of President Harold Radcliffe'41 or whenever club pressure becomes too great to withstand otherwise. — EDWIN H. OLSTEAD'37, Secretary, Pine Road, RFD 5, Carlisle, Pa.

Chicago, Ill.

With President Bob Wise'28 wielding the gavel, the M.I.T. Club of Chicago held its final meeting of the current season on Monday, May 16, at the Bismarck Hotel. The program was a gala one beginning with an efficiently and speedily conducted business meeting. Nominating committee chairman John Barriger'21 reported the following nominations for officers for the 1955-1956 season, and they were subsequently elected by the membership: President, Alfred S. Alschuler, Jr.'35; Vice-president, Dwight K. Taylor'26; Secretary, Leonard W. Russum'47; Treasurer, Warren N. Barr, Jr.'49; Directors, John H. Wills'26 and Richard B. Smith'33. Bob Wise reported on the highlights of the 1954-1955 season pointing out the increase in dues paying members to 450, representing about 50 per cent of our mailing list.

Having completed the business end of the meeting the more social side of the program came into play. Two speakers discussed different aspects of the television field. Dr. Alexander Ellet, Vice-president of Zenith Radio Corporation, explained the operation of subscription television. To illustrate the talk he showed a most interesting film describing the several methods of getting subscription television into the home. Mr. Kenneth Wilson, Athletic Commissioner of the Big Ten, then discussed the problem of televising collegiate television emphasizing the effect of television on game attendance. Following the talks Otto Eitel'24 invited everyone to the matinee performance of "Cinerama."

The Club had a most interesting program of meetings during the 1954-1955 season. Two were plant visits to television studio WNBQ and the R. R. Donnelley printing plant. At WNBQ we were flattered to have a special television program produced and broadcast for us over a closed circuit. At the Donnelley plant the current issue of *Life* magazine was seen rolling off the presses. Two dinner meetings were addressed by imported speaking talent when Horace Ford'31 of Tech discussed the Project Lincoln at M.I.T., and Dave Shepard'26 spoke about developments in M.I.T.'s educational program. A highlight of the year was when the Club's Vice-president, Al Alschuler, Jr.'35, presented a talk on "Modern Design" assisted by an excellent collection of slides.

During the year the membership of the Club underwent the usual changes with members moving in and out of the area at the rate of more than one a day. Although sorry to see friends go, it was most pleasant to make new friends as the year went on. The current year has been a pleasant one for the Chicago Club and with our usual mid-western optimism we look forward with interest to the 1955-1956 season. — ROBERT S. FAUROT'44, *Secretary*, 4115 Ogden Avenue, Chicago 23, Ill.

Fairfield County, Conn.

The spring dinner meeting of the M.I.T. Club of Fairfield County was held at the Clam Box, Westport, on May 3, with 23 members in attendance. Samuel A. Goldblith'40, Assistant Professor of Food Technology at M.I.T. discussed the history of food preservation, and the application of new sciences to present and future methods of preservation. The next meeting will be held in the fall, and area residents will be advised by letter. — DONALD WATERMAN'39, *Secretary*, 99 Flat Rock Road, Easton, Conn.

Indianapolis, Ind.

On April 21 through the courtesy of Ray Ramsey'17, 21 members of the M.I.T. Club of Indianapolis and wives made an inspection trip of the Noblesville Generating Station of the Public Service Company of Indiana, Inc., after an excellent dinner at the Noblesville Elks Club. Members attending included: James Sligar'41, J. Ray Ramsey'17, Edwin McNally'18, Edward Targonski'36, John Babbitt'17, Edgar Godley'26, Thomas Harvey'28, Harry Lees'33, Gustav Klumpp'30, S. P. Pantazi'46, Mrs. Pantazi (the former Pat Holmes'47), Thomas Dorste'47 and Mrs. Dorste (the former Lee Edwardson'47).

The Noblesville meeting was this season's fifth meeting in as many different locations. The previous meeting was held as a dinner-dance at the Indianapolis Athletic Club. Assisting in the success of all of our meetings are the wives and guests who are always invited and most cordially welcomed.

At the last meeting, the following officers for the next season were elected: President — T. C. Dorste; Vice-president — John Babbitt; Secretary-Treasurer — S. P. Pantazi. — JAMES L. BALL'48, *Secretary-Treasurer*, 1015 Linden Avenue, Muncie, Ind.

Lower Ontario

On Tuesday, March 29, 1955, the M.I.T. Club of Lower Ontario held a dinner meeting at the Granite Club in Toronto. Thirty-five members attended the meeting. The Honorable R. H. Winters'33, Minister of Public Works, was the speaker of the evening. Bob spoke with pride of his happy associations with the Institute, and commented on his activities as a member of the Visiting Committee in Geology. It was very interesting to hear about the various activities for which his Department of Public Works is responsible. In particular, Bob dealt

with the problem of reducing unemployment through Public Works; one of the most significant difficulties is the very low labour content in many such expenditures. As usual the meeting was guided by our President, Maxwell C. Coutts'39. Miss Elsie MacGill'34 Consulting Engineer introduced the speaker. — G. Ross Lord'32, *Secretary*, Mechanical Engineering Department, University of Toronto, Toronto 5, Ontario, Canada.

Madrid, Spain

The M.I.T. Club of Spain held an organization meeting on April 19. Under Spanish law, it is necessary to receive permission from the government to organize a new club; and as this permission had not been granted, the meeting was more or less preliminary. I was delighted, however, to meet so many enthusiastic Tech men and to have the opportunity to say a few words to them. There were 20 members at the meeting, and it is anticipated that the final enrollment in Spain will total 50 Tech men. Commander J. F. Cunniff'25 was the leader in organizing this new club.

Following is a list of the persons who attended the meeting: (No ladies attended the business meeting but were invited to the dinner afterwards at the Hosteria del Laurel, Madrid.)

H. E. Hagedorn'28, F. M. Corliss'25 and Mrs. Corliss, Jose Martinez'54, R. Stempf'42 and Mrs. Stempf, F. A. Canada'27 and Mrs. Canada, S. T. Barker'16 and Mrs. Barker, W. L. Newton'48, W. V. McMenimen'03, C. L. Pool'21 and Mrs. Pool, J. M. Bosch Aymerich, 9-46, G. R. Bises'41 and Mrs. Bises, J. R. L. Williams'42 and Mrs. Williams, Commander and Mrs. J. F. Cunniff, F. Mauri'50, P. D. G. Hamilton'19, Pedro Moran'51, J. Montull'50, J. Gil de la Serna'52, B. Fabrega'35, C. Godino'20. — WILLIAM V. MC MENIMEN '03, Vice-chairman of the Board, Raymond Concrete Pile Company, 140 Cedar Street, New York 6, N. Y.

Miami, Fla.

A very pleasant social meeting of the M.I.T. Club of South Florida was held on Saturday evening, April 30, in the large dining room at "The Top of the Columbus." This room is on the seventeenth floor of the Columbus Hotel at Biscayne Boulevard and Northeast First Street, Miami, and commands a beautiful view of the city and Biscayne Bay. An excellent dinner was served, following which dancing was enjoyed. The following members of the Club were present: William Sussman'40, President; Don Whitmore'51, Vice-president; Kenneth Armstrong'10, Secretary; Scott Hoehn'47, Treasurer; Ed Mandell'21; Philip Caplain '22; Dick O'Donovan'27; Alexis Kononoff '29; Isadore Rudnick'32; Meyer Baskin '34; James Wadham'34; Harold Selleck '43; Irving Steinhardt'48; Blas Mazzeo '50; and Don Brown'51. Each member was accompanied by his wife, except two of the younger members who are unmarried and brought their girl friends, and the venerable Secretary who is a poor lone widower. Harold Selleck, a man-

ufacturer of watercycles at Boca Raton, Irving Steinhardt, a Miami Beach attorney, and Blas Mazzeo, an instructor in electrical engineering at the University of Miami, were welcomed as new members. It is planned to hold another social meeting at Miami Springs Villas early in June, prior to the departure of the Secretary for the 45th reunion of his Class at Chatham, Mass. — KENNETH P. ARMSTRONG'10, *Secretary*, 2830 N.W. 156th Street, Opa-locka, Fla.

New York, N. Y.

The Annual Meeting of the M.I.T. Club of New York was held this year on April 27 at Longchamps Restaurant in New York City. The occasion included a talk on "Color Television" by Dr. W. R. G. Baker, a Vice-president and General Manager of the Electronics Division of the General Electric Company. As Chairman of the National Television Systems Committee which is responsible for recommending standards for compatible color telecasting, Dr. Baker was able to give a thorough analysis of this refinement of a relatively new medium. As a result, those attending the meeting went away with a much clearer understanding of the problems being encountered.

During the short business meeting the slate of candidates proposed by the Nominating Committee under S. W. Fletcher'18 were elected. President, A. L. Bruneau, Jr.'38; Vice-presidents, H. D. Kinsey'24, B. H. Nelson'35, H. F. Smiddy'20; Treasurer, H. I. Kram'42; Secretary, M. R. McGuire'41; Assistant Secretary, J. E. Plantinga'45; Directors serving to 1958, D. M. Broady'22, W. I. McNeill'17, G. K. Parmelee'48; Director serving to 1956, F. M. Kurtz'22.

After the election of officers, Lou Bruneau discussed the club program for the forthcoming year. The announcement that the Club was about to become established in suitable quarters was greeted with enthusiasm. Through the medium of a lot of hard work W. J. Littlefield'17 has located six prospective locations. It will probably never be known how hard some people have worked to reestablish the prestige once enjoyed by the M.I.T. Club of New York. When the step is taken, every Alumni in the area should do everything he can to make it successful.

The M.I.T. Alumni Association of Long Island, N. Y., over 120 strong, toured the Grumman Aircraft plant in April. From all reports the conviviality could only be compared to a tour of the Wellesley campus by Freshmen. Future plans of the Long Island group call for an annual meeting on May 18 at the Roslyn Country Club. This occasion will mark the end of their first year of organized activity. On July 2nd the Long Island group are planning a beach party at Jones Beach and are generously inviting all the Alumni in the Greater New York area to attend.

In Westchester there will be a combined golf outing and dinner meeting under the Chairmanship of Gene Smoley '19 on June 21. The speaker will be John R. Menke, President of Nuclear Develop-

ment Associates, Inc., and he will discuss "Prospects for Economic Atomic Power." The location will be the Scarsdale Country Club. All this, perhaps, is an indication of the growing activities of Alumni affairs in the New York area. May I say all are welcome to come and join the fun.—M. R. McGuire'41, *Secretary*, The Cooper-Bessemer Corporation, 25 West 43rd Street, New York 36, N. Y. JOHN E. PLANTINGA'45, *Assistant Secretary*, Meyer, Strong & Jones, 101 Park Avenue, New York 17, N. Y.

Northern California

The present slate of officers living up to promises is giving the group here more activity in three months than any other slate has done in a year. The March Dinner Meeting was held on the sixteenth of the month and featured California's renowned architect, present Dean of the School of Architecture, University of California, and formerly dean of the same school at M.I.T., W. W. Wurster '17. Attendance totaled 37 made up of 23 Alumni and 14 lady guests which is high compared to past gatherings. The meeting was held at the Faculty Club of the University of California and was presided over by Vice-president R. T. Perry'25. Dean Wurster sketched the history of M.I.T.'s Architecture Department from its beginning through his deanship. Since this writer was unable to attend the meeting, he regrets that he can give you no further comment. With apologies to Dean Wurster and readers, it is certain that the following Alumni were present: R. D. Farquhar'95, S. T. Carr'06, J. F. Johnston'07, G. D. Whittle '08, E. J. Riley'09, E. W. Brown'15, W. W. Wurster'17, F. R. Hewes'19, W. E. Richards'23, H. F. Simonds'24, R. T. Perry'25, M. P. O'Brien'25, M. C. Conkey'25, C. Douglass'27, Mrs. Jean Brand Bennedsen'28, R. K. Haskell'29, G. A. Vincent'30, J. H. Arnold'31, E. M. Hicks '35, W. B. DuBois'41, V. R. Hayes'44, E. Nielsen'50 and H. J. Zimmer'51.

Tuesday informal lunches are still held at the New Delmonico Restaurant, 328 Sutter Street, San Francisco. Come when you can—RAYMOND E. KEYES, *Review Secretary*, 1637 Francisco Street, Berkeley, Calif.

Northern New Jersey

The final meeting of the Club for the 1954-1955 season was held on Wednesday evening May 11 at the Hotel Suburban in East Orange. It was a special dinner meeting celebrating the twentieth anniversary of the founding of the Club. More than 75 members and guests attended.

After dinner, President Jack Andrews '33 began the evening's activities by calling the Club to order on a brief business meeting. First, he introduced each of the committee chairmen and officers who have served this year and gave his own and the Club's warmest thanks to them for their splendid work and co-operation. Treasurer Joe Wenick '21 then rose and, speaking on behalf of the Club, thanked President Andrews for the wonderful job he had done this year

in advancing the best interests of the Club through use of his fine talents for organization and administration. In addition, Joe gave a brief report of the financial position of the Club. As of May 11 the Club had a membership (active and sustaining) of 186 and a cash balance in the bank of \$1,010 compared with a membership of 255 and a cash balance of \$1,060 for the year 1954. Joe also reported that the Twentieth Anniversary Scholarship Fund had reached \$672 from 71 contributors. A scholarship of \$500 from this fund will be awarded this June to a worthy graduating senior from some high or preparatory school in New Jersey. The recipient has already been selected by the Scholarship Committee but the recipient's name could not be announced at this meeting since official notification of his acceptance to Tech had not yet been received.

President Andrews then called on Fletcher P. Thornton'36, Chairman of the Nominating Committee, for his report. Fletch presented the following slate of candidates for office for the 1955-1956 club year: President, Russell P. Westerhoff'27; Vice-president, Donald H. Spitzli '27; Secretary, Stuart G. Stearns'39; and Treasurer, Joseph Wenick'21. In addition, the following were presented as candidates for the Board of Governors (three year term): Newton S. Foster'28, Rudolph J. Ozol'36, and Emerson D. Callahan'49. No nominations by petition were received by the committee and since no other means of nomination is allowed under the Constitution and By-Laws, the above slate was unanimously elected by the single vote of the Secretary. Jack Andrews introduced next the president-elect, Russ Westerhoff, who made a short acceptance speech asking for the same loyal and co-operative support which had been given his predecessor. Next to be introduced by President Andrews were two guests: Lou Bruneau '38, President of the M.I.T. Club of New York; and Joe Conrad, Secretary of the New York Club.

Clayton D. Grover'22, Past-president of the Club and recently elected to serve on the National Nominating Committee of the Alumni Association, was then called on by President Andrews to act as toastmaster for the evening's program. One by one each of the past-presidents, all of whom were guests of the Club at this meeting, were named and introduced by Clayton as follows: Jack F. Andrews '33, 1954-55; Glenn D. Jackson'27, 1953-1954; Grover C. Paulsen, Jr., '40, 1952-1953; Newton S. Foster'28, 1951-1952; Lyman L. Tremaine'23, 1950-1951; Russell E. Lowe'16, 1949-1950; Clayton D. Grover'22, 1948-1949; Frank O. Pierson '29, 1947-1948; Walter L. Wise, Jr., '34, 1946-1947; Arthur R. Brooks'17, 1945-1946; George A. Chutter'21, 1944-1945; Newman H. Drake'30, 1943-1944; Warren H. Dolben'30 (absent), 1942-1943; Maxwell K. Burchett'21, 1941-1942; Miles Pennybacker'23, 1940-1941; William B. Coleman'24 (deceased), 1939-1940; Carole A. Clarke'21, 1938-1939; Everett W. Vilett'22, 1937-1938; Winfield I. McNeill'17, 1936-1937; and the Club's first president, J. Frank Maguire '17, 1935-1936.

Clayt then called on Donald P. Severance'38, Secretary-Treasurer of the Alumni Association, who spoke briefly about the changes in the Institute in the past 20 years since the founding of the Club.

Cac Clarke'21 was then called on by the toastmaster to present the history of the Club on this its Twentieth Anniversary. The idea of the formation of an Alumni Association in New Jersey, Cac said, originated in 1934 at a bridge party at which Frank Maguire'17, Win McNeill'17, and Bob Bonney'13 were guests. On December 17, 1934, Messrs. Maguire, McNeill, and Al Glassett (then treasurer and later president of the New York Club) met with Walt Farr'17, Bill Grady'22, Heinie Horn'22, Ev Vilett'22, Bill Coleman'24, Don Spitzli'27 and Chick Dolben'30. Following the discussion, Al Glassett gave full approval to the idea on behalf of his Club. Those present decided to form a larger and more representative committee and to proceed with a meeting on January 8, 1935, for the purpose of organizing a club. Those who took part in this latter meeting included: Frank Maguire and Win McNeill of 1917, Cac Clarke'21, Lee Carroll, Bill Grady, Heinie Horn, Milt Manshel and Ev Vilett of 1922, Art Carvill and Bill Lutz of 1923, Bill Coleman'24, Bill Hakewessell'25, Sid Brookes and Earl McMahon of 1926, Don Spitzli'27, Charlie Rogers'28, Chick Dolben'30, Gordon Pearson'33 and Wally Wise'34. The Technology Club of New York agreed to the taking over of their Jersey areas of Bergen, Essex, Hudson, Middlesex, Passaic, Union and part of Monmouth Counties. By subsequent agreement with M.I.T. and the M.I.T. Club of Philadelphia, all of Morris, Monmouth, Warren, Sussex, Hunterdon and Somerset Counties were added.

The petition for a club charter stated that "the purpose of the Club will be to promote good fellowship and to further the interests of the Alumni and the Institute as a whole." The inaugural dinner was held on March 15, 1935 at the old Down Town Club in Newark at which 310 people attended, although only 150 had been expected. Our late Institute President and Chairman of the Corporation, Karl T. Compton, was the principal speaker and Charles E. Smith '00, President of the Alumni Association and Vice-president of the New Haven Railroad, presented the charter. Allan R. Cullimore'07, then president of Newark College of Engineering, was the toastmaster. Frank B. Jewett, then a member of the M.I.T. Corporation and president of the Bell Telephone Laboratories, introduced Dr. Compton. Bill Orchard'11, President of Wallace and Tiernan, supplied the music on his accordion.

Clayt Grover then introduced Hugh S. Ferguson'23, President of the Alumni Association and President of Dewey and Almy Chemical Company, who brought us the official greetings and congratulations of the Institute and the Alumni Association. If the number of hearty laughs are any indication, Hugh's most humorous story about Churchill, Eden and Dulles should be knocking around this area for quite a spell!

Everybody got a good laugh from the cute story told by Toastmaster Grover which he used as a rather unique introduction for the guest speaker. The speaker, John E. Arnold'40, is an associate professor of mechanical engineering at the Institute and has received considerable renown nationally for his new and rather unique approach to problems of design engineering. Professor Arnold spoke on "Creative Engineering," which is the name of his course at the Institute. The purpose of the creative design engineering class mainly to develop in the M.I.T. students taking the course the ability and desire for true creative thinking. The course has thus far produced excellent results.

So ends twenty years of enjoyable activity by our Club with this past season being one of the most active and successful ones we have had to date. Your Assistant Secretary would like to thank at this time all of you (officers, members, committee chairmen and especially the members of the Publicity Committee) for the splendid co-operation and help you have given him in furthering the coverage of news and publicity about the Club in this column and in your local areas through the local newspapers. It has indeed been a great privilege and pleasure for him to work with you, and the experience which he has gained will become a most useful asset. Do have a nice summer. See you next fall.—*STUART G. STEARNS*'39, *Secretary*, 25 Elmwood Place, Short Hills, N. J. *JOHN T. REID*'48, *Assistant Secretary*, 80 Renshaw Avenue, East Orange, N. J.

Sao Paulo

The M.I.T. Club of São Paulo held its General Meeting on Saturday, April 16, at the Clube de Campo on Santo Amaro, São Paulo. The gathering was planned to be of the outdoor picnic type with wives, children, and friends attending. Weather conditions, however, converted it into an indoor tea and dinner affair. After an excellent dinner, President V. F. B. de Mello'6-46 called the meeting to order. The principal item on the agenda was the election for the office of vice-president, as called for by the constitution. Allen G. Velho'39 was unanimously re-elected. In addition, elections were also held to fill the post of secretary-treasurer, left vacant by the resignation of Rogerio N. da Silva Rego'47. Marc L. Aelion'51 was elected for the balance of the term. Special credit, and the Club's gratitude, go to Rogerio Rego for admirably managing the affairs of the Club during its first year of existence. Members present were: Allen G. Velho'39, Hanns J. Maier'2-44, Victor F. B. de Mello'6-46, Paulo F. B. de Mello'47, and Marc L. Aelion'51. Also present at the meeting was Burton A. Bromfield'2-44 who is on a short visit to Brazil. Notice was received from Edward W. Kimbark'33 of his return to the United States to assume the position of Dean of the School of Engineering of Seattle University, Seattle, Wash. We wish him luck at his new post.—*R. N. DA SILVA REGO*'47, 376 Rue São Carlos do Pinhal, São Paulo, Brazil.

Washington, D. C.

The 1954-1955 season of the M.I.T. Club of Washington, which has just concluded, has been one of the most successful seasons in the long history of the Club judging from the quality of our guest speakers and the increasing interest and enthusiasm expressed by the Club membership. We closed the year with about 200 active members. It is expected that this year's outstanding program will result in increased membership.

The 1954-1955 season started with a convivial Stag Party held at the picturesque Potomac Boat Club. Our second meeting was a dinner party featuring an interesting talk by Joseph Volpe, Jr., former general counsel of the Atomic Energy Commission on "Controversial Policies in Atomic Energy." This second meeting inaugurated our present association with the palatial Cosmos Club at 2121 Massachusetts Avenue, which provided very pleasant surroundings for our four dinner meetings this season. The arrangement will continue next year.

The third meeting featured a thought-provoking talk on "Research and Development in Defense" by the Honorable Donald A. Quarles, Assistant Secretary of Defense for Research and Development. The Honorable Francis P. Bolton, Representative to Congress from Ohio addressed us on the subject of "A Lady in Congress," during our next dinner meeting. This meeting featured Ladies Night and we had a very large group of M.I.T. wives present. The final dinner meeting of the season featured a stimulating address by J. R. Wiggins, Vice-president and Managing Editor of the *Washington Post and Times-Herald* on "Freedom of Information."

The M.I.T. Club continued its co-operation with and support of the Potomac Regatta and engaged a large section at the Tenth Annual Spring Championships of the Eastern Association of Rowing Colleges held on May 14, 1955, at which the M.I.T. crew made a very notable showing. This active social season is a preview of the interesting meetings which the Club is now planning for next year. The success of this season in no small measure was due to the leadership and program planning of Bill Ahrendt, our Club President.—*STERLING H. IVISON*, Jr.'41, *Secretary*, Bureau of Aeronautics, Navy Department, Washington, D.C. *ANDREW F. HILLHOUSE*, Jr., '43, *Review Secretary*, Solar Aircraft Company, Cafritz Building, Washington, D.C.

CLASS NOTES

• 1885 •

It is 70 years since our Class graduated! Of the 87 regulars (and about 50 specials) who entered in 1881, there are only three now living: Eliza Prentiss Huntington, James L. Kimball, who is living in Florida, and the undersigned, living in Brookline, Mass., all over 90

years of age. There is also living a Special assigned to our Class, namely, Dr. Richard S. Lull, New Haven, Conn.

Several men of our Class have won distinction. I almost hesitate to name any for fear of omitting some, but the records of the following have come to my notice. Dr. Charles R. Allen, S.B., V. In 1908 he was made a M.A. by Harvard and in 1927 given the degree of D.S. by West Stout Institute of Menominess, Wisconsin. He was really the Father of Vocational Education at Washington for 16 years. David Baker, S.B. III. Won fame as the founder, manager and president of Iron Works in Australia. In 1936 he was presented the Legion of Honor insignia and diploma of the American Institute of Mining and Metallurgical Engineers. Frederick Fox, S.B., V., S.M. taught chemistry at Tech. Later he took a post graduate course in Germany, receiving a Ph.D. from the University of Leipsic. Upon his return he was graduated from the Harvard Law School. (Note: As far as I know, Fox and Charles H. Bartlett were the only '85 men to become lawyers and Harwood Huntington and A. C. Fuller the only to become clergymen.)

Dr. Hammond V. Hayes was graduated from Harvard, from which he received his A.B., M.A. and Ph.D. Took post graduate work at M.I.T. 1883-1885. Was for many years president of the Sunmarine Signal Company. Later had his own laboratory developing new services along lines of his past experience. Dr. Harwood Huntington died in Los Angeles on January 4, 1923. He attended M.I.T. only one year, returning to Trinity College in Hartford, whence he was graduated with honors and the first prize in Chemistry. He taught chemistry at Harvard College for one year. He studied in Germany and Alsace-Lorraine for two years, and at the school of mines, Columbia University, in 1893 and 1894. During summer vacations he studied at Oxford, England. The degree of Ph.D. was awarded him from Columbia, where he majored in chemistry and minored in law. He was admitted to the bar of Connecticut in 1895, and practiced chemical jurisprudence in New York City two days a week, and in Washington two days. He held the office of assistant appraiser at the Port of New York from 1901 to 1904. Later he became an Episcopal Minister. He was a life member of the American Chemical Society, Inc., and author of several books. Dr. Arthur D. Little could, I think, be called the Father of Industrial Chemistry. He received honorary degrees from the University of Pittsburgh (Pa.), Columbia University (N.Y.), Tufts College (Mass.), and the University of Manchester, England. He was president of several chemical societies in America, and one of the very few Americans to become president of the Society of Chemical Industry, London, England.

Isaac W. Litchfield, Inventor. Upon his return from the west in 1906, revitalized the Alumni Association at M.I.T., was managing editor of The Review, 1908-1917, and was a prime mover in starting the Alumni Council and in the Association of Class Secretaries, and editor of Science Conspectus.

Dr. Richard S. Lull, B.S., M.S. and Honorary D.Sc. from Rutgers University (N.J.) Ph.D. from Columbia University and Honorary M.A. from Yale. Post graduate work one year at M.I.T. Sterling Professor of Paleontology and Director of the Peabody Museum, Emeritus, Yale University. Alexander R. McKim, S.B., I., received an M.A. from Columbia University (N.Y.) Later studied at Technische Hochschule in Berlin. (While in Germany, he became an expert student duelist.) In 1911 he was appointed to organize the New York State Bureau of Docks and Drains. In 1912 he wrote a code for dams which was adopted by the State of New York. He retired from the Bureau of Docks and Drains in 1927 and spent several years in Europe before returning to the U.S.

Tracy Lyon, S.B., II. While associated with a western railroad, he devised the "tonnage method" for rating the hauling capacity of locomotives. He designed the first Pullman Club Car. Later he was connected with the General Motors Corporation, and still later engineer advisor to the president of the Chrysler Motor Company. Hugh MacRae, S.B., III. After many years of experimentation, he has finally consummated a farm program which should benefit all farmers in the Southern States. Professor A. L. Merrill, S.B., II, became professor of Mechanism at M.I.T. and secretary to the Faculty. Everett Morris, Treasurer of M.I.T. for 11 years; president of the Alumni Association. He was very active in Tech affairs and a great help in its critical period.

Frederick H. Newell, S.B., III, was the Father of Irrigation. Received an honorary degree of Doctor of Engineering from the Case School in 1912. Was president of the American Society of Engineers. Dr. Louis E. Reber, who took a post graduate course at M.I.T. in 1883 and 1884, received his B.S., M.S., and D.Sc. from Pennsylvania State College where he became Dean of the School of Engineering from 1895 to 1907. From 1907 to 1926 Dr. Reber was the Dean of the Extension Division of the University of Wisconsin. (See full report Technology Review, May 25, 1945.)

Professor Charles R. Richards, S.B., II, was director of the School of Science at Pratt Institute, Brooklyn, N.Y., and later director of another department at Columbia University for 10 years. From 1908-1923 was director of Cooper Union, New York. In 1925 Professor Richards was appointed by Herbert Hoover, then Secretary of Commerce, as chairman of a committee to visit and report on the Paris Exposition for the benefit of American Manufacturers. In April, 1926, at the twentieth annual dinner of the Art-in-Trades Club at the Waldorf Astoria, Professor Richards received the Cross of the Legion of Honor of France. The Michael Friedsam Medal for 1935 was awarded to him by the Architectural League of New York. The citation reads in part: "Distinguished educator in the fields of science and art, and notable for his constructive contribution to each."

Robert E. Richardson, II. Did pioneer work in electrical construction in Chicago and in 1887, with two assistants, in-

stalled lights in the first pullman car to be equipped with electricity. He and Richard H. Pierce built the first out-of-door lighting system in this country. This was for the World's Fair in Chicago. In 1915 he formed a rate department for the Electric Bond and Share Company, which he headed until his retirement in 1933. Professor Henry P. Talbot, S.B., Ph.D., Sc.D., Professor of Chemistry at M.I.T. and Dean of Students 1921-1927. "Errors and Omissions excepted" as accountants say.—ARTHUR K. HUNT, *Secretary*, Longwood Towers, Brookline 46, Mass.

• 1886 •

The so-called "assistant secretary" of the Class regrets that the Secretary was unable to prepare these notes himself, for he would have written more lively notes about Gamwell and Campbell. Earlier this season the Secretary received from Gamwell a copy of the December 24, 1954 Bellingham (Wash.) *Herald* from which the following is quoted. "Roland G. Gamwell, who helped to build the town of Fairhaven 63 years ago and thereby helped to make local history, was 91 last July 25. Some of his vivid Christmas memories are of the opulent Christmas parties at the ornate Fairhaven Hotel during the brief but fabulous period of the Fairhaven boom. The hotel was the center of social life in the glittering frontier town that set out to be a metropolis but gave up the idea when its boom collapsed. Other memories are of Christmases in Providence, Rhode Island, where he was born in 1863. Mr. Gamwell came to Fairhaven May 15, 1889. He built on Sixteenth Street the house in which he still lives." The paper contains a fine picture of Mr. Gamwell telling stories of his school-days to two small children. It was Campbell, however, who puzzled the Secretary and his assistant when he sent a volume of *Love Lyrics* as a birthday gift to the assistant. At the time the question was not why love lyrics, but how did Campbell know about the birthday. That has been satisfactorily explained.

From time to time the Secretary has been concerned by the increasing number of obituaries he had to report. It is now the sad duty of the Assistant Secretary to record the following. On May 5, after a brief illness, Arthur Taft Chase passed away at his home in Island Creek, Mass. Although he had not been well since October, he showed no real sign of illness until 10 days before his death. Born in Haverhill, Mass., June 7, 1864, the son of R. Stuart and Ada (Harvey) Chase, he was educated in the Haverhill schools and at M.I.T. where he prepared for electrical engineering. Trouble with his eyes prevented him from completing Course VIII and graduating from the Institute; he did, however, work in the electrical field in New Jersey and Massachusetts for some years before establishing his own business in Haverhill. He retired from this to join the accounting firm of his brother, Harvey S. Chase '83, and remained with the firm as a C.P.A. when it became Seamans, Stetson and Tuttle. He retired from active association with this firm 18 months ago.

He was a member of the American Institute of Accountants, the Massachusetts Society of Certified Public Accountants, the Haverhill Whittier Club, the Haverhill Historical Society, and member emeritus of the Monday Evening Club of Haverhill; he was a member also of the First Parish (Unitarian) Church of Kingston, Mass., the Jones River Village Club of Kingston, and the Duxbury Rural and Historical Society. In 1890 he married Minnie May Gardner of Haverhill and had one daughter Priscilla (Chase) Jacobsen. Mrs. Chase died in 1934 and the daughter six years later. In 1943 he married Miss Sally Freeman Dawes of Island Creek, a life-long friend, and went to live in her family home.

Mr. Chase was well-known for his friendly manner toward children. At church gatherings he was always surrounded by groups of excited youngsters waiting patiently for their friend to bring on his bag of tricks. His barn was the scene of many lively affairs as the neighborhood children thronged to view his comical films. He will be sadly missed by the citizens of the town as well as by the children. Mr. Chase is survived by his wife and twin granddaughters, Mrs. Thomas McIntyre of Seattle and Miss Jana Jacobsen of Honolulu. —SALLY F. D. CHASE, Island Creek, Mass.

• 1890 •

Editorials from various papers, encomiums for Frank Greenlaw, continue to come in. His pastor, Reverend Carl Bare, writes: "I know of no one in this city who was so thoroughly devoted to its people. He had what the Quakers call a 'concern,' and so deep and powerful a concern that it formed the driving force of his life among us. Even a partial list of his public interests and accomplishments is impressive."

Harold Roberts writes from Arizona: "I am still alive and kicking so you can imagine the Tucson climate agrees with both the Mrs. and yours truly, no arthritis and the like, no lack of appetite; I can still take a drink in moderation. My daily life is reading periodicals and such; when tired of that I usually browse about my workshop, re-equip my plumbing, and I assure you the electric equipment has proper attention, and I find there is plenty of such repairing necessary. Three years ago my eyesight began to fail but I had the necessary operation undertaken with the result I now have excellent vision, but I don't drive my Lincoln." —GEORGE A. PACKARD, *Secretary*, 25 Avon Street, Wakefield, Mass.

• 1891 •

The data received from classmates has now been published and I would again request all members who have not yet done so to please write a short letter giving their present activities and the condition of their health. —GORHAM DANA, *Assistant Secretary*, 44 Edge Hill Road, Brookline, Mass.

• 1892 •

The Secretary is indebted to President Killian for the loan of a pamphlet which he received from Fred H. Meserve entitled, "My Experience in Collecting

Historical Photographs." The pamphlet is a copy of an address by Meserve before the New York Civil War Round Table, under the auspices of the New York Historical Society, on November 1, 1953, when the members gathered to honor its Honorary President, Frederick Hill Meserve, on the occasion of his 88th birthday and to highlight more than 50 years of study and devoted labor gone into building the famous "Meserve Collection." The pamphlet contains a number of excellent photographs, beginning with one of the author and next, one of his father, who enlisted from Boston as a private in the Union Army and came out as a major after serving under Burnside, McClellan and Grant. Among others, are pictures of Burnside, McClellan, Salmon P. Chase, and Cornelius Vanderbilt. He outlines briefly the work he did in the past 60 years.

Meserve says, "Although I have been in the textile manufacturing business for 60 years or more, my avocation is perhaps described more or less in full in this paper." Incidentally, Meserve states, "My collection, 60 years in the making, is a great historical pictorial foundation which can never again be put together. I am offering it for sale to some institutions which are interested in such details of history as the demands upon me have become increasingly difficult." Dr. Killian states that previous to receiving the pamphlet, Meserve had sent him a photograph of Lincoln as a part of his collection. This historical collection was mentioned in my article in the May issue of The Review, being called to my attention by our classmate, Edward Wells. Again, I know all his classmates will join me in extending to Fred Meserve our sincere congratulations on the thoroughness and efficiency with which he has carried out a monumental work.

The Secretary has to report the death of another classmate, David Whiting, in February 1955, at his home in Wilton, N. H. Whiting was with us in Course V. Also the death of Charles O. Lenz at his home, Summit, N. J., on April 5, 1955. Lenz attended the School of Mechanic Arts and has registered with the Class of 1892 ever since completing that course.

Before this appears in The Review, the alumni meeting for the coming June will be over but the Secretary hopes to meet there a number of our classmates living in the vicinity of Boston.—CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

• 1893 •

We have just received a clipping from The Woburn *Times* of March 10, 1955, headed "Leonard B. Buchanan Honored for 62 Years Temporary Service." We are pleased to quote portions of the news clipping. "Leonard B. Buchanan, a supervisory executive of Stone and Webster Service Corporation, was honored in Boston on his 82nd birthday last week with a dinner at the Algonquin Club, attended by a group of executives of Stone and Webster, Inc. and affiliated companies. Mr. Buchanan was presented with a gift from his associates by William T. Crawford, chairman of the board of Stone

and Webster, Inc., New York. The 82-year-old official, who still goes to his office every day and remains active in the business, was graduated from M.I.T. in 1893 with a degree in electrical engineering. In the fall of that year he applied to Stone and Webster for a job—a young firm specializing in electrical engineering." Several days after being interviewed, Classmate Buchanan received a letter, dated September 9, 1895, stating that they had some temporary work which might take two or three weeks and might possibly lead to permanent work in the future.

The account goes on to say that the "temporary job has lasted 62 years and Mr. Buchanan is still going strong. However, he says he has never been notified that he is a permanent employee and is still on a temporary basis!" Leonard Buchanan "started as a draftsman but soon became a junior test engineer in the electrical testing laboratory. Two years later he was placed in charge of the testing laboratory. In the next six decades he held a series of responsible positions, most of them in the Stone and Webster Service Corporation, which was set up to counsel clients on management and production problems. Mr. Buchanan has been in charge of the company's counseling services to a number of clients in the electrical, chemical, lumber, textile and mining industries." We all are sure this observance of Leonard Buchanan's eighty-second birthday was a very happy occasion.

The Alumni Association sent a letter over President Page's signature to the 50 members of our Class, asking approval of the suggestion to make a contribution from the Class of 1893 to the Compton Memorial Fund. As of this writing (May 13) replies have been received from 18 members of the Class, all of whom expressed approval of the suggestion.—GERTRUDE B. CURRIE, *Assistant Secretary*, c/o Fay, Spofford and Thorndike, 11 Beacon Street, Boston 8, Mass.

• 1894 •

Our distinguished classmate, Charles G. Abbot, has long held the conviction that it is possible to forecast general weather conditions for long periods, even years, in advance. As Director of the Astrophysical Observatory and later as Secretary of the Smithsonian Institution, he made extraordinary researches on the cycle and effect of sunspots and on the fluctuations of the solar constant of radiations on the weather, correlating them with temperature and rainfall and other factors shown in the weather reports of several cities for which data were available over many years. Since retiring from the secretaryship he has been a research associate at the Smithsonian, and has so thoroughly investigated, analyzed and tabulated the vast amount of data, including the effect of volcanic action, as well as use of explosives in war, that he has now brought out a report entitled "Sixty-year Weather Forecasts," with scores of curves to supply the evidence for his thesis.

It looks like a great piece of statistical research, and knowing Abbot's absolute scientific integrity, the Secretary believes

he has made a great contribution. Abbot believes that maps of general expectable weather conditions could be drawn which would give reasonable approximations of the climatic conditions, and which might be useful in many ways. But he adds: "The only fly in the ointment seems to be that tremendous disturbances of the atmosphere, such as are sometimes caused by volcanoes, and also by profuse use of powerful bombs, in war and in tests, may spoil forecasts of this ambitious type."

Jim Kimberly has made his spring migration from Tryon, N.C., back to his summer home at Neenah, Wis. Like the birds, he makes these north-south migrations yearly and doubtless finds much satisfaction and pleasure in so doing.

An item in an earlier set of notes mentioned the death of Charles K. Cummings on January 18. Mr. Cummings was a graduate of Harvard in 1893, and then spent a year with our architects in 1894. He was very active in philanthropic affairs, and had been president of the Massachusetts Society for the Prevention of Cruelty to Children from 1932 to 1942, a trustee of the Boston Athenaeum and the Museum of Fine Arts, a former president of the Somerset Club and of the Tavern Club. He was a vestryman of Trinity Church, Boston, and a senior warden of St. John's Church, Beverly Farms. It is with much regret that I report the death of William L. Woollett of Los Angeles, who died at his home on February 12. He was for nearly 50 years a successful architect in Los Angeles.

It may interest some of the class to know that the Refrigeration Research Foundation has established a graduate fellowship for research in the application of the sciences to the technology of commodity refrigeration, and which is to bear the name of your Secretary. The research work may be carried out in institutions in North America or abroad. It is hoped that it may frequently be done at M.I.T.—SAMUEL C. PRESCOTT, *Secretary*, Room 16-317, M.I.T. Cambridge, Mass.

• 1895 •

In our later years we can have the pleasure of memories of the delightful and lasting friendships made during our college years. These memories are often saddened by the news that some one of our mates has passed on. Surely, life takes its toll! We received word from Malcolm H. Masters'33 that his father Frank B. Masters passed away on March 25, 1955, in Norwalk, Conn. Living mates will well remember Masters for his famous illustrating of several Institute *Techniques*, especially the one for the Class of 1895. Frank's career began as draftsman with the B. F. Sturtevant Company, Jamaica Plain, Mass. During 1896-1897 he was assistant instructor, Engineering Laboratory at Tech. From 1897 to 1900 he served as instructor, Mechanics Art High School in Boston. By 1902 he followed his illustrating work with the Curtis Publishing Company of Philadelphia. He was an artist in New York City illustrating for the "Saturday Evening Post," "Scribner's," "McClure's," "Every-

body's," "American System," "Youth's Companion," and other magazines, subjects being mainly engineering and industrial. In 1918 he became prominently connected as Camoufleur with the U.S. Shipping Board and Navy.

Masters for many years was a commercial artist dealing in engineering subjects, including radio and map work. He illustrated "Railroads On Parade" for the New York's World Fair, a program for the Baltimore and Ohio Centennial in 1930, and "Run of the 20th-Century" for the New York Central. For a number of years, after losing Mrs. Masters, he lived with his daughter, Mrs. Clarke Pickens of Hulda Hill Road, Wilton, Conn.

We just received the news of the recent passing of Thomas Mark Lothrop, II, at his new home in Maplewood, N. J. Tom was born in Taunton, Mass., but lived the greater part of his life in the Mid-West. Before his retirement in 1953, he lived for 45 years in Glencoe, Ill., with business connections in Chicago. Lothrop graduated from the Allen School, West Newton, Mass., and then entered the Institute with the Class of 1895. After graduating he worked with the U.S. Lighthouse Department testing fog signals at Boston Light. He then engaged with the American Heating Corporation designing electric heating apparatus. Following this he was with the New England Telephone and Telegraph Company for five years. In 1902 he was appointed "steam expert" for the Joliet works of the Illinois Steel Company. Since 1910 he has been designing, installing and manufacturing steel equipment for offices and factories. Before his retirement he was president of the Lothrop Angle Steel Equipment Company of Chicago. He was a member of the M.I.T. Club of Chicago, and of the Old Guard Club of Summit. He is survived by his wife, a son Arthur of Glen Ridge, Ill., a married daughter of Maplewood, N.J., and six grandchildren. — **LUTHER K. YODER, Secretary**, 69 Pleasant Street, Ayer, Mass.

• 1896 •

With classmates enjoying the relative freedom of the prescribed duty of planning for a summer vacation, there seems to be an abandon of calendar planning as vacations seem to become less fixed in point of definite plotting. We trust that regardless of the horizon sought you may all enjoy the bestest and the mostest for the summer of 1955. There is little news to report. Myron and Mrs. Pierce dropped in recently to report a much appreciated motor trip. Was wise in not making the motor job a personal operation. My professional reaction to the wisdom of this decision on his part is that all of us should be content to enjoy the scenery without the handicap of trying to operate behind the wheel. This is the last report to the Class by your Secretaries until the November issue of the Review. We have received notice of the death of our classmate Walter E. Curry, Cadillac, Mich., in March, 1955. Please supply brief biographies to make these notes more interesting to our readers. — **JOHN A. ROCKWELL, Secretary**, 24 Garden Street, Cambridge 38, Mass. **FREDERICK W.**

DAMON, Assistant Secretary, Commander Hotel, Cambridge 38, Mass.

• 1897 •

Our classmate Ed Osgood, 1022 Forest Street, Reno, Nev., in correspondence with George Wadleigh about the Alumni Fund adds the following philosophical note about the Universe and dear old Mother Earth: "We got the fever and got a scintillator-geiger and my son and I and his family took to the hills 100 miles east of here south of the old camp of Wonder, where a "strike" reported. His four-wheeler took us right into the mountains; we appeared to get a base reaction but no ore. However, we went to ammonite fossil bed and I got a dozen or so samples. The uranium strike was supposed to be barely north of it but no indication where we were. What started me up was dipping into philosophy — our second most important book, perhaps, Fred Hoyles — "Nature of the Universe," Mentor 125, \$3.35! Our Galaxy started five billion years ago (only) and we "were there — as hydrogen atoms." Then 2.5 billion years ago our Earth got spinning. Then one billion years ago the breath of life was breathed into us, that is, our forebears. Now one billion years later we are about ready to blow it out of ourselves — and start all over again and try to do better? The practical end was this: he said the first 20 miles of our Earth's crust seems to be radioactive and that is what maintains our heat and that the center of the Earth may be only as warm as a small fire. I had discounted the chance of much uranium out here but concluded on reading the above that it was rather silly not to take a fling at finding some of it. Hoyle says we will use it up and then probably turn to the tropics and lush vegetation to convert to alcohol for fuel for use along the way to our end, perhaps some 10 billion years hence. We are learning so much so fast about ourselves that it is fascinating. It makes one marvel why we are determined to make such asinine fools of ourselves. Our greatest highbrow, Norman Cousins, author of "Who Speaks for Man" (published six months ago) and editor of "Saturday Review of Literature," says: 'We are in a state of near anarchy and we must undertake some regulation of life.'" George Wadleigh adds: "Ed Osgood has me worried, only one billion years to go and I have not commenced to pack my clothes for the trip to Alpha Centauri only four light years away."

We are sure you all will be interested in the well-deserved recognition that has been bestowed upon one of our esteemed and loyal classmates. Luzerne S. Cowles, Course I, has been made an honorary member of the Engineers Club of Boston in recognition of his efforts to organize the club covering a period of five years prior to the opening of the club house at Two Commonwealth Avenue on January 25, 1913. The Club moved its quarters to 96 Beacon Street on July 26, 1948. The 1955 club book carries a snapshot of Cowles (taken on his Fiftieth Wedding Anniversary, June 1952) and contains a brief history of the Engineers Club an excerpt from which follows. "A key figure in all this activity that saw the Engineers

Club born, housed, and nursed through financial difficulties, was its first secretary, Luzerne S. Cowles, who held the office from December 18, 1911, until February 16, 1920. In the Bulletin of the club issued on his retirement as secretary, due recognition of his splendid service was made as follows: 'Of the many active and energetic members who contributed so much towards the successful start of the Club should be mentioned the name of Luzerne S. Cowles. He organized and was secretary of the Joint Engineering Committee. The committee's work, covering a period of one and one-half years, made possible the organization of the Club. Mr. Cowles was the first secretary of the Club and held this office until February, 1920, when absence from Boston necessitated his retirement.'

Miss Madeline McCormick of the Alumni Office and Assistant Treasurer of the Class, informs me that the cash balance in our Class Fund as of May 12 was \$411.98.

The Class has suffered a severe loss in the death of John R. Macomber. He was one of the four members of the Class that served with distinction for many years on the Corporation. He remained at M.I.T. for one year only, and while he did not attend our class affairs he was a constant and generous contributor to class funds. Furthermore his service to the Institute was outstanding. The following is from the Boston *Herald* of May 12.

"John R. Macomber, 79, financier, philanthropist and sportsman, died today at 'Raceland,' his estate on Salem End Road in Framingham Centre. He had been in failing health for the past year. Mr. Macomber was president of Massachusetts General Hospital and chairman of the finance committee of M.I.T. Until he began relinquishing positions in recent years, he was chairman of the Board of the First Boston Corporation, and a director in many large corporations. A breeder of thoroughbred race horses at his estate, he was the man who suggested the name 'Suffolk Downs' for the Boston race track. As a founder of the Eastern Horse Club, he was active in its successor, the Eastern Racing Association, in the early days of legalized racing there. Private funeral services will be held at the Newton Crematory Chapel Friday afternoon. It was requested that flowers be omitted. Mr. Macomber was a life member of the M.I.T. Corporation, a trustee of the New England Conservatory of Music and Tufts University, a founder of the Metropolitan Opera Association, and a director of Northeastern University.

He was a director or trustee of the National Foundation for Infantile Paralysis, Massachusetts Society for Prevention of Cruelty of Children, Massachusetts Society for Prevention of Cruelty of Animals, American Humane Education Society and Boston Work Horse Relief Association.

Born in Framingham Centre, November 1, 1875, he was a bachelor. His only surviving close relative is a brother, Charles, also of Framingham.

He was graduated from Chauncy Hall School in Boston and was a member of the Class of 1897, M.I.T. He began his

career in investing banking as a messenger with N. W. Harris and Company, in 1894, was transferred to the company's Chicago office in 1897, was transferred and returned to Boston a year later. He became a member of the firm in 1909. When Harris, Forbes and Company succeeded N. W. Harris in 1916, he became president of the new firm, a position he held until 1931. He was Chairman of the Board of Chase Harris Forbes Corporation from 1930 to 1933, and in 1934 became chairman of the Board of the First Boston Corporation.

Mr. Macomber had been a director and executive committee member of the United Shoe Machinery Corporation, Bird and Son, Inc., and the U. S. Smelting, Refining and Mining Company, a member of the Advisory Committee of the Bond Investment Trust and a director of the American Surety Company. He also had been a director of the First National Bank, Old Colony Trust Company, Boston Safe Deposit and Trust Company, New England Power Association, Chase National Bank, International Paper Company, Puget Sound Power and Light Company, and the Harris Trust and Savings Bank. He was a member of the Country Club, Longwood Cricket Club, Union, Exchange and Algonquin Clubs in Boston, the Union and Links Clubs of New York, Millwood Hunt and Turf Clubs, National Steeplechase and Hunt Association and American Thoroughbred Breeder Association. — JOHN P. ILSLEY, *Secretary Pro-tem*, 26 Columbine Road, Milton 87, Mass.

• 1899 •

Arthur Little Hamilton born in Fond du Lac, Wisconsin, on November 29, 1876, died in Sugar Hill, N. H., on March 20, 1955. After graduating from Phillips Academy, Andover, he entered M.I.T. with the Class of 1899. He was elected president of the Class in the senior year, and subsequently took over that office permanently. His classmates will remember him as the life of the party at most of the five-year reunions.

He married Helen Willis Parker of Lawrence, Mass., in 1900, and in 1904 took his wife and three year old son Parker to Fairbanks, Alaska. In the late winter of 1906, traveling with dogs in extremely cold weather, he brought his family back to Lawrence, where in June a second son, Arthur Little, Jr., (nicknamed Dick) was born. When Dick was only six weeks old the family put him in a market basket for the journey back to Alaska. There Ham staked out mining claims and did business in real estate until 1909, when, with the education of the children in mind, he returned to the States. After a brief sojourn on the West Coast, he purchased the International Tag Company in Chicago, and became its president. Though possessing considerable executive ability, his real interest was more in philosophy than in business. He joined the Chicago Ethical Society, became a Trustee in 1914, and served as President from 1918 to 1924.

During World War I he served with the American Red Cross as Captain in the Field Service in France. In 1924 he sold out his interests in Chicago, and for

two years toured Europe and the Far East with his wife. In 1927 they decided to settle down in Sugar Hill, and selected classmate Thomas F. Robinson as their architect. Ham and Tom were close friends with many common interests. When Tom was writing plays as an avocation, Ham had given him unstinted support in the several New York productions. An important feature of this new home was a wood-working shop where Ham spent many happy hours making furniture of antique design for various members of his family and friends. Though semi-retired, he was elected to the New Hampshire Legislature as representative of Grafton County. He served in this capacity for 16 years.

After the death of his wife, he married Miss Eleanor Shane, a much beloved friend of the whole family. The last years of his life were spent happily entertaining friends, keeping up the grounds, and feeding the birds and animals which he enticed in various ways to the Sugar Hill retreat. Parker Hamilton, now teaching mathematics at Antioch College, pays tribute to his father as follows. "Dad's outstanding and never flagging quality was sympathetic understanding of human beings. Many of my friends, and heaven knows how many others, turned to Dad (and Mother) for advice. They were never turned down, but always helped toward better living. Dad had a faith in man that was almost mystical, but certainly real, and this faith made his help sound. This was my Dad." (Miles S. Sherrill was a classmate of Art Hamilton at Andover Academy for four years preceding their entering M.I.T. With this 60 years close friendship, it was most fitting that Miles was asked to prepare the above obituary. B. R. R.)

Certain classmates have told me from time to time of the struggles they made in order to be able to enter Tech and of the subsequent sacrifices they endured in order to complete their technical education at M.I.T. Such stories should not only be interesting to other 1899 men but an inspiration to youths of today who have the ambition for a technical education but lack the necessary funds. Material for several more true stories are already at hand but similar or other types of experience while an undergraduate will be of general interest. Please contribute such facts. All such material will be published anonymously unless otherwise stated. Come to the aid of your Secretary, classmates, and send in your "ancient history" or your life story.

A young man brought up right on "the stern New England Coast" graduated from high school with a great desire to acquire a technical education but with no funds to pay his tuition and no way of borrowing them. He also lacked three subjects required for entrance. With grim determination he set out to acquire that which he lacked. It took three years to accumulate enough funds to pay the first year's tuition (\$200 and a surplus for living expenses). Granted scholarships for the second and third years and half of the fourth year the problem became one of economizing enough to be able to pay living expenses on what funds could be accumulated in spare time and vacations.

Our "hero" secured a room at Upham's Corner and "hoofed" it back and forth (about five miles each way) except on stormy days. A parcel post carton from home each week furnished sufficient food for breakfast and dinners. Lunch consisted of a generous glass of water. On special occasions he bought a half a pie since "a new Englander just couldn't exist without his pie." But the time came in his senior year when he had to float a loan of \$200. (No revolving fund was then available). This was paid off in two years following graduation "besides buying an engagement ring for the girl friend who afterwards became my wife." This classmate feels that the habits acquired in doggedly sticking to an undertaking and the experiences gained thereby were well worth the struggle and have since made life worth while. — B. R. RICKARDS, *Secretary*, 381 State Street, Albany, N. Y. MILES S. RICHMOND, *Assistant Secretary*, Little Compton, R. I.

• 1900 •

We have received the following from Rear Admiral J. R. Perry, Chief of the Bureau of Yards and Docks of the U. S. Navy. "It is with deep regret that the Chief of Civil Engineers of the United States Navy announces the passing of Captain Clinton D. Thurber, C.E.C., U.S.N., Retired, on March 10 at Meredith, N. H. after a heart attack. Captain Thurber was born in Attleboro, Mass., on November 14, 1877, the son of William and Elizabeth Thurber. He spent his early childhood and attended grammar school in Attleboro. He attended the Boston English High School and graduated from M.I.T. in 1900. He was commissioned in the Civil Engineer Corps on January 20, 1904, with a rank comparable to that of today's Lieutenant Junior Grade. Captain Thurber received special commendation for his services during World War I, and was retired from active duty with the Navy in 1934. Since that time he has lived in Meredith and was active in civic and community activities. He was a past president of the Meredith Rotary Club. He is survived by his wife, Winifred R. Thurber, and two sons, Robert R. Thurber, an attorney living in Wellesley Hills, Mass., and Roger B. Thurber, President and Treasurer of the George B. Grall Company of Cambridge, Mass., and five grandchildren. Funeral services were held in Meredith on March 22. Burial will be in Arlington National Cemetery, Washington, D. C. It is of interest to us that Mrs. Thurber was a sister of George Russell.

The Alumni Office has received word of the death, some time last January, of Sullivan D. Jones, who was with us in our freshman year. He had been living in New York City which was his home while a student. Cliff Leonard writes, "After 50 years with the Leonard Construction Company, I have become Chairman of the Board, and somewhat taking a forced idleness at the Company Timber plantations (Sunny Hill Plantation Company) at Camden, S. C., where I usually spend my winters. I have a son and daughter and three grandchildren at Lake Forest, Ill., which is still my home. I would like to be remembered to all the

good fellows in the Class and I am sorry in past years I have not been able to get down to reunions. I hope you will have a jolly one this year. It is a long time since we were boys but we can pretend to be once in a while." — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

• 1901 •

I have first to report another break in our ranks. Edwin T. Robbins, XIII, 84, of Springfield, Mass., died at the Wesson Memorial Hospital on March 15 after a brief illness. He was a Springfield resident since 1926. A mechanical engineer and naval architect, he was a graduate of Amherst College and M.I.T. He leaves a son, a daughter and a brother.

Alonzo Isham, II, from Seattle, writes: "I have encountered all the vicissitudes of life so far and am now retired from a professional and engineering as well as commercial career. My points of interest are putting around home, reading, doing some experimenting and occasionally, when the weather is good, going out to the country place, chopping down trees, swimming, digging clams, planting and making additions to the place. My good wife keeps me from getting into mischief and in good shape for what there is of me."

Jim Carr, II, of Cambridge, says that he is automatically retired. A report from Arthur Little, Port Jervis, N. Y., reads: "As I retired from the industrial world years ago, we have been living in a rural part of New Jersey where we farmed in a small way and became members of some of the local organizations. Our son is class of '42 and is in St. Albans, West Virginia, where we have spent several winters. It has been a good life in healthful mountainous country in Sussex County, N. J., where I thoroughly enjoyed reading the class letters during quiet leisure moments. In October 1954, I forgot, when working, to keep track of my years and suddenly found myself in a hospital with a fractured hip, so I am now in Port Jervis in a Convalescent Home for the rest of the winter." (February.) My good friend Ed Fleming, in Los Angeles, tells me: "While I retired on pension five years ago, I am still retained as part time consulting metallurgist by American Smelting and Refining Company. Altogether I have now been associated with the company for 49 years. I manage to keep reasonably busy as I also do some independent consulting work. While I manage to get back to New York about once a year, I'm afraid I won't be able to attend our 55th reunion, but please give my regards to our classmates."

Harry Dart, VI, now resides in Mattituck, Long Island, N. Y. He says: "Former Assistant Secretary, The Hartford Steam Boiler Inspection and Insurance Company, Hartford, Conn. Retired March 1, 1953." One of our faithful classmates, Bill Farnham, of Orange, N. J., says: "Nothing much to report other than I continue to enjoy good health. As you know, before going to M.I.T., I graduated from Brown University in 1899. We held our 55th last June and all enjoyed the affair. Of a class of around 150 we

had 71 present. They honored me by making me class president. Hope the 1901 Class of Tech plan a get-together next year. Will try and attend."

Anthony Peters, I, writes from Westwood, Mass., "Answering your plaintive plea (I object to the adjective) for news and more news. I'd say that your attitude is somewhat different from that of the feller who was about to be hanged, who said 'Well, heck, no noose is good news.' Terrible, what? Four years ago we moved from Boston to Westwood, Mass., a town of 7,000, that separated from Dedham, the county seat, in 1897. Consequently Westwood has not many interesting old buildings of the Wren or Bulfinch type, but it is a friendly community and we like it. The old town pound is still in existence, and the Town Officers include a Keeper of the Pound, a Fence Viewer and Field Drivers, but we must admit that these offices are only honorary and complimentary.

"The Congregational Church, to which we belong, was built in 1808 of good old 'Pumkin Pine.' The framework of the steeple and main buildings are still in perfectly sound condition. The church stands on a solid granite ledge on the highest ground in town, and is a noted landmark, at the intersection of Nahatan and Clapboard Tree streets. How many of you know what a 'clapboard' tree is? The interior of the church is most pleasing with its curved white pews with mahogany trim; black iron lighting fixtures. We have just finished a drive to raise funds for a new Parish House and it has been interesting work looking up old deeds and property lines. Everyone pitches in and does what he is best qualified to do, and the money saving is considerable.

"As our house is on the side of a gravelly hill, I rent a piece of land suitable for a vegetable garden and so far have had very good luck. Yesterday I bought seeds for the early planting which will be soon we hope. And so as the gal on the Groucho Marx show said 'We eat what we can and what we can't eat we'll can.' And also we will put some in the Bomb Shelter. Let's hope that the 'Russkys' won't take it into their heads to come flying over just as we are sitting down to our clam chowder at our 55th reunion. And here's hoping that Willard is on Senator Saltonstall's side and omit the tomatoes."

Well, this ends our news for this year. A pleasant summer to you all. — THEODORE H. TAFT, *Secretary*, Box 124, East Jaffrey, N. H. WILLARD W. DOW, *Assistant Secretary*, 78 Elm St., Cohasset, Mass.

• 1902 •

Grant Taylor writes from 604 Bay Avenue, Clearwater, Fla. "We first occupied our new home here in October, 1953. After seven months in that season, and five in the present one we feel quite at home and believe that we shall continue to like the place. We are conveniently situated, not far from the center of town and are glad to say that a good number of our northern friends have found it possible to see us when reaching this Tampa Bay area. Classmates Hammond and Collier have been welcome

callers, as was A. M. Holcombe '04 from nearby St. Petersburg."

Cates writes that things are going well in the copper business with the highest price for copper in recent history. He Sent a snapshot of himself which shows him to be still "in the pink." In a letter to Dan Patch, Jim Mahar says: "I have had no time for other outside interests as I am now serving my second five-year term as a member of the Boston Housing Authority. During this time I have served two and one-half years as chairman of the Authority, and after giving up this position for two years, I have just been elected to the chairmanship again.— BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

• 1903 •

Our Secretary, F. A. Eustis, returned from an extensive visit to the island of Jamaica, B.W.I. He reports that he enjoyed sun-bathing and sea-bathing and had the pleasure of sharing his sea-bathing with C. E. McCulloch '26, Vice-president of Foster Wheeler Company. He shared with McCulloch the experience of seeking to recover from the effects of body ailments.

A long letter from A. E. Place, I, deserves quoting. It is a long time since we have heard from him and are delighted. He writes, "I should have graduated with the Class of 1902, but working for the New York City Metropolitan Waterworks during my summer vacation 1901, I came near dying from ptomaine poisoning together with malaria. Starting the senior year 1902 my health gave out, and I had to drop out, and take a job as transit man and chief of party out of doors, laying out the electric railway between Worcester, Mass., and Hartford, Conn. That put me back on my feet and I graduated with the Class of 1903, but without getting well acquainted with the members.

After three years of service in Montana and Colorado with first the U.S. Geological Survey as engineering aide, then as assistant engineer with the U.S. Reclamation Service, I had to resign to take over management of mines owned by the family in Oaxaca, Southern Mexico. That took me out of civil engineering and into mining and metallurgy, and I built up an engineering office under name of Place and Elton, in the City of Oaxaca, managing and developing foreign-owned mines, water-power and railroad concessions until the big revolution of 1910-1920 caused me to lose everything I had accumulated: mines, concessions, ranch and real estate, and making it necessary for me and my family to return to the U.S. again.

"So I started building up a business in Los Angeles, California, as consulting engineer, while operating some mines of my own in the southwest. But the crash of 1929-1933 again wiped me out, and I had to start again taking jobs managing smaller mines, and so on, anywhere between the Arctic Circle in Alaska and Panama, hard work but small compensation. In 1938 I took charge of a very profitable mine for Los Angeles clients in southern Nevada, and settled there for life, (as I thought) in Boulder City,

Nevada, but the gold edict, 'L-208,' closed our mine and mill down in 1942, and I then went as research operator with the U.S. Bureau of Mines in Boulder City, and then as plant superintendent for the Manganese Ore Plant of the Hanna Company at Henderson, Nevada, near home. When the plant closed down at the end of the war, I went back again to the Republic of Mexico, where my knowledge of land and language has enabled me, at my age, (78 last December) to keep in bread and butter as consulting engineer for foreign investors. Also I have been getting back into mining on my own, and I think I am pulling out again in a moderate but satisfactory way. My family stays in Boulder City, where we own our home and some property, while I am here in Mexico (Chihuahua), most of my time. We visit back and forth frequently. When alone, I make my home here in Chihuahua City at the Foreign Club, where I get my mail. How long I can keep this up, I don't know. Thanks to outdoor life and lack of 'disintegrating' habits during my life, my health is good, and I can ride and climb with most of them, although I am getting to the time when I don't care so much about strenuous long rides or walks any more." Congratulations to you Place, some of us a few years younger, probably could never keep up with you. Joyce (Clarence) is off on travels again, but his trips will have to wait for the next issue. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1904 •

After a long hiatus in Class Notes, I take my pen in hand to resume as best I can my duty as your Secretary. The official reason for the gap in the notes is that on February 17, I was leaving the building known as the M.I.T. Swimming Pool, I fell on the front steps and injured my right thumb. The ensuing wearing of a plastic cast for two months prevented my writing at all and if you could see what I am producing you would decide against broken thumbs, — as I have.

We are not as many in number now as we were a year ago. Arthur H. Langley died on November 13, 1954; Henry Richardson, on November 14, 1954, and Frank J. Severy on December 20, 1954. How glad we are that they were present at our 50th Anniversary. We have three sets of twins in the Class, Fred and Frank Farrell, Maurice and Frank Carty, and Franklin and Carll Chace. Of these three sets only the Carty twins still remain. They were at some of the functions of our Fiftieth. Early in January Carll Chace passed away as is told in the following clipping. "Service for Carll Smith Chace, 74, partner in Chace and Chace Inc., 125 E. 57th Street, real estate and insurance firm, will be held at Church of the Transfiguration. His grandfather, Thomas Carll Smith, built the church, better known as the 'Little Church around the Corner.' Mr. Chace died Wednesday in a Worcester, Mass., hospital. He was injured last August in an auto accident. A graduate of Harvard University in 1905, he founded the real

estate and insurance firm with his brother, Franklin M. Chace. Mr. Chace, who also lived at East Hampton, L.I., was a member of the Maidstone Club, Sons of the Revolution, St. Nicholas Society, Huguenot Society, Society of Colonial Wars, International Garden Club, Church Club and Harvard Club. Surviving besides his brother, are two daughters and a son."

I wrote to Mrs. Severy for some particulars of Frank's passing and have heard nothing as yet. Our sympathy goes wholeheartedly to Gus Munster, whose wife died in April after a long illness with crippling arthritis. Several classmates attended the funeral services on April 28.

Allen S. Courtney died at his home in Kendallville, Indiana, on March 11, and we are indebted to Mrs. Courtney for the following clipping which gives some idea of his successful life. Because of my inability to write for some time, I was lax in sending our sympathy. From the clipping it is apparent that our classmate had a full and fruitful life. "Allen Seymour Courtney, 73, a Kendallville resident since 1942, died at 5 A.M. today in his home, . . . after an extended illness. A graduate of M.I.T. as a mechanical engineer, Mr. Courtney was a former Pennsylvania railroad expert who assisted in developing a freight handling system, in Chicago, which later was adopted by all railroads. Following his graduation from M.I.T. in 1904, Mr. Courtney joined the Pennsylvania system in Fort Wayne, where he took a special apprentice course. He was later to serve in various capacities, general foreman of the machine shop, master mechanic during the World War I period, and assistant engineer of motive power in Toledo, Ohio. It was while he was in this latter position that he and two others of a committee did efficiency work which produced the freight handling system at the Polk Street freight house in Chicago. Mr. Courtney, after 35 years' service, retired in 1939 because of declining health."

Around Christmas I had a note from Gus Munster saying he had had a Christmas card from Mrs. Ernest L. Rupf of Range Road, Windham, N.H., saying among other things that Ernest's eyes had gone bad and he had not been able to read for three years. But in the summer he worked in the garden and in the winter he spends much time in his workshop. She is his eyes now. If any of you fellows with good eyes, and an automobile, can find Range Road in Windham, N.H., the Rupfs would be more than glad to have you call.

From Shorty Holbrook: "Perhaps you have wondered why you had not had an answer to your good Christmas card and note, I hasten to congratulate you both on being together again. I must tell you that early in December I bought a new New Yorker Chrysler and was so proud we decided to christen it by a trip to our daughter's family in Lansing, Mich. Coming back on December 30 while east of Akron, Ohio, in fairly heavy traffic a woman in an old car ahead of me, suddenly stopped without signal. In that instant I had to crash her or turn left into oncoming traffic, or right into the

ditch. I instinctively chose the ditch. It was three feet deep and I turned on my side, with Mrs. Holbrook coming crashing down on me. I was uninjured, but Mrs. Holbrook had a broken vertebra in the neck. Three weeks in Ravenna Hospital, Ohio, and now three weeks at home with nurse. Several weeks more before she will be able to go it alone. So that is why you and other friends who sent us cards have not heard from us.

"We were glad that you and Mrs. Stevens were able to be together again. I understand what you have been through because of several weeks alone in a Kent, Ohio hotel. Just now, cannot tell if or when we will be able to go to N.H. again, but will look forward to going there and to having you visit us again. Best to you both. Sincerely yours, Elmer A. Holbrook (Shorty)." This letter from Shorty Holbrook relates an unpleasant experience through which he and Mrs. Holbrook passed on December 30 last. I received his letter just after I had my accident and have just now been able to send him our communication and hope that Mrs. Holbrook has completely recovered.

This letter from Holcombe gives an account of a Regional 1904 meeting held on February 22 at the Old Haven Hotel, at Winter Haven, Fla. It is wonderful to know that this regional vice-president set-up put into effect at our Fiftieth is paying dividends, at least in one jurisdiction.

"Dear Steve: I read your account of the reunion last November and can vouch for its accuracy and its philosophy, if that is the right word for your running comments. I am glad we could all feel so good, including yourself. Now I am reporting on the 1904 Southern Regional Meeting held February 22 at the Old Haven Hotel at Winter Haven, Fla., (The second such gathering) at which the following showed up for breakfast and/or lunch: Guy Palmer and Louise, Everett Hiller and Virginia (who entertained the ladies at Centerville so successfully), Lewis Newell and Mary (from Braninton) and your regional vice-president and Martha. Golf, shuffleboard and scrabble provided enough fields of competition for every one to strut his stuff (or his wife) to complete satisfaction. Don't be too disdainful of shuffleboard — it lames you both up and down if you only indulge once a year.

"No record was made of the golf scores as there were not enough holes for an endurance test. Preliminary warm-ups at St. Petersburg were attended by Walter Hadley and Olive (now domiciled at New Port Rickey in a dream house designed and partly built by him.) A. T. Coupe and Ethel (hibernating at St. Petersburg Beach in a recently acquired Florida type bungalow) and the two Newells, the attraction being the Ladies Professional Golf Association pro-am tournament at the Sunset Club in which my wife Martha participated as one of the host club members. Also letters were received from Karl Peiler, vacationing at Fort Lauderdale, C. R. Sheafe of Lake Apropa, who attended last year, and Currier Lang, explaining how pressing

business prevented their presence in person. Notwithstanding they are all retired, in good health, and in funds. Steve, 'we-all' had a fine time. See if you can't fix it to attend yourself next year — you owe your wife a trip South — we would love to have you. Remember: St. Petersburg is winter quarters for 1904, M.I.T. Verily and Truly, Holcombe."

Dwight Fellows went to Florida in January and stayed at Bonita Springs until April. When he came back he reported that the Florida sunshine had had a very beneficial effect on his aching back and that he hoped his return to northern weather would not cause a recurrence of his backache.

This quotation from a letter from Dan Comstock dated June 11, 1954, is interesting, if antiquated, but I thought you might be interested to know what Dan is doing.

"Mrs. C. and I greatly regret not being able to be with you on the Cape, but she has been ill and I don't like to leave her. She is a very healthy person and this, I am sure, is only temporary but it makes her feel pretty forlorn. As far as my doings are concerned since last reported, we have continued with the industrial research firm of Comstock and Wescott, Inc. Wescott, a Tech and Harvard man, but somewhat younger than we are, died in 1950 but the rest of the group with additions of other personnel have carried on. Our work is partly on new enterprises which have originated in our own group, but mostly our work consists of service research for manufacturing companies. The problems submitted to us are of such a nature that the solution is not obvious, and often it is not even clear in which field of physics or chemistry the solution lies. Our projects present an ever-changing aspect and the work is interesting for this reason. Most of our principals are Harvard and Tech men and, needless to say, the memory of good old M.I.T. supplies a benevolent atmosphere which surrounds our somewhat adventurous work. Best wishes and affectionate greetings to the Gang, and I deeply regret the circumstances which make it impossible for me to go to the Cape, although I hope to see you at Tech before you go down. Dan Comstock."

This about cleans up the items which have accumulated during my period of inactivity. The next communication should reach you in the November issue. Anyway, I wish you all a pleasant and relaxed summer with a restful vacation period in it somewhere. Sincerely and technologically, — HENRY W. STEVENS, Secretary, 1082 Commonwealth Avenue, Boston 15, Mass.

• 1906 •

A letter has been received from Claude S. McGinnis, VIII, dated April 24, which reads as follows: "This note is from C. S. McGinnis, VIII, 1906. I think you are not quite up to date in the 1906 men in Florida. The wife and myself have been here in Clearwater for three years. I retired three years ago as chairman of the Physics Department of Temple University from which I sent many graduates to the Graduate School of M.I.T. The

late Dean, Dr. Harry Goodwin, was kind enough to send a letter to our President praising the quality of our offering so I feel I have done my bit in that respect. Have one son living nearby and another who plays first chair clarinet in the New York Philharmonic Orchestra. Burton Kendall and wife also Course VIII, 1906, put in an appearance once a year but I see few others of our Class. My daughter-in-law plays harp with the Metropolitan orchestra." Claude also advises his research was done in musical acoustics. It seems to be showing up in the next generation.

Claude should have been in the list of permanent residents of Florida included in our April Class Notes. The Secretary pleads guilty of missing the information when reviewing the class list as our present list checks Claude's letter. Not such a bad error after all, as we might have missed hearing from him if your Secretary had included him in the April notes. The information about Claude's musical son and daughter-in-law is very interesting. Also, according to Claude, we should include the Burton Kendalls in the list of annual migrants to the Sunshine state.

The Secretary attended the May Alumni Council meeting on the invitation of Ned Rowe, our representative on the Council. Class Vice-president Sherman Chase was also present. Horace Ford talked on "Forty Years on the Cambridge Side" which included a reference to the "Tech Riot," one of the outstanding events of our undergraduate days.

We are indebted to Abe Sherman for a clipping from the Sarasota *Herald-Tribune*, April 17, entitled "Scrimshaw Combines Northern and Floridian Ideas for Living." This subject refers to the residence of Mr. and Mrs. Frank Baldwin, II. Scrimshaw in this case is used to imply delicate work to finish something which otherwise would be rough and crude. The house was designed by one architect and built by professional carpenters. Baldwin did all the interior work and made much of the furniture. Baldwin retired in 1937 and then outfitted an ancient sailing ship as a home. He cruised up and down the Atlantic coast until the war came in 1942 and then settled down in Siesta Key. The write-up was illustrated by four large photographs which indicated a most attractive home.

A letter is at hand from Harold Coes dated April 25. Following are extracts from the same: "I was sorry to learn through your class notes of death of Ed Pollister. He was my client 10 years ago when Ford, Bacon and Davis was retained by the Busch family to be consulting engineers and advisors to the Busch-Sulzer Diesel Engine Company. I was assigned the account. When I got out to St. Louis, Pollister had retired to his farm in Michigan on account of some disagreement with Company policy. We determined that he should be brought back as president of the Company and this was done. We designed and constructed a plant to manufacture and assemble the Navy's 5" anti-Aircraft gun twin projectile and powder hoists. In these the ship fire control officer could set the projectile fuses, or change them

as the shell traveled up the conveyor. These conveyors and guns gave a good account of themselves in the war with the Japs in the Pacific. Ed and I worked together for over two years. We had some of our staff at the plant all the time. I almost commuted between New York and St. Louis. Ed was a forceful go-getting type of man; a top salesman, a driver and a very hard worker."

The Secretary has a clipping from a Portland, Me., paper of January 16 advising that Pollister was the son of George A. and Bell Pollister who resided at 2 Atlantic Street, Portland, for many years. Pollister is survived by his widow who was Julia Shipley of St. Louis, a son, Edward B. Jr., a sister Alma Pollister Greeman of Hendersonville, N.C., a brother, Raymond S., of Santa Ana, Calif., and two grandchildren.

A note from Abe Sherman advises that they had a call from Ralph Patch and his daughter while they were in Sarasota last winter. Abe described the call as "most enjoyable" but "far too short." The reference to Ralph Patch prompted a call to his house and a telephone conversation with the aforesaid daughter who checked as to the call on the Shermans. Ralph returned from Florida the latter part of April and, at this writing (May 16) is visiting for a few days in the vicinity of Boothbay Harbor, Maine.

Sherman Chase presided at a special panel at the Second Annual Natural Resources Conference sponsored by the Connecticut River Watershed Council, April 6, at the University of Massachusetts, Amherst. The special panel considered the increasing demands of industry on water resources in the Connecticut Valley and what steps may be taken to provide a more normal year-round supply.

The Secretary noted with much interest President Coes's annual letter to the Class. Your writer might remind readers again that gifts made to the Alumni Fund for this year and next year will be included in the Class 50-year gift. Class Agent Sherman Chase has set his sights at \$50,000, which will mean an all-out effort to attain this goal. I am sure it can be done without undue sacrifice on the part of any giver.

Your Secretary has already received his copy of the book of excerpts from Dr. Compton's speeches and heartily recommends it as very worthwhile reading. Remember, when you read these notes, our Fiftieth Reunion is but 11 months away, so we are now on our last lap and must all make a concerted effort to put on a worth while celebration. The June notes informed classmates of the death of Paul N. Critchlow, I, who died on January 2 at Pittsburgh, Pa. The Secretary has received a clipping from the Pittsburgh *Press* of January 3, 1955, which gives additional information, which will be of interest to classmates. "He served 22 years on the Sewickley School Board where he was president for 12 years, retiring in 1953. He was a Trustee of the Sewickley Library and a member of the Health and Water Department. A section of the library is called the 'Critchlow Shelf on Citizenship' honoring the man who dedicated

so many years of his life to public affairs. He was an elder in the Presbyterian Church, a member of the American Bar Association, the Pittsburgh and American Patent Law Associations, the Duquesne Club, the Edgeworth Club, and a former member of the Board of Management of the Downtown Y.M.C.A. He is survived by his widow, Mrs. Elizabeth Fleming Critchlow, a sister, Helen; a son, Paul N. Jr., of California; two daughters, Mrs. William Drake and Mrs. John Duval, both of Texas and several grandchildren.—JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington, 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills, 82, Mass.

• 1907 •

Charles A. Eaton, whose home is at 4511 Atlantic Avenue, Atlantic City, N. J., and whose office is at 1931 Bacharach Boulevard in the same city, is president of Eastern Engineering Company, Inc., a firm doing heavy construction work and hydraulic dredging. Chick enjoys an international reputation in his field. The following is quoted from a long article about our classmate in the *Atlantic City Press* of March 27, 1955: "When underwriters, confronted with an enormous bond issue to finance the gigantic St. Lawrence Waterway and Power Project in which Canada and the United States have finally united, wanted an expert and yet neutral opinion concerning the various estimates arrived at by the participating engineering concerns, the Philadelphia firm of Day and Zimmerman, consulting engineers, called on an Atlantic City engineer, as of sufficient stature and experience to qualify as an expert in the case. Charles A. Eaton was called in to join in a survey of the vast enterprise, entailing a \$400,000,000 outlay and reaching from the Thousand Islands to distant Montreal. It so happened that the original estimate was found to be correct and the work is now in progress . . . World War I found Eaton a subaltern in the Coast Artillery, and he was commissioned a major and transferred to the Ordnance Department. He came to Atlantic City in 1920 and, with his brother Harold, now deceased, formed the present firm. They engaged as one of their first major projects in the development of Brigantine, N. J. in behalf of the Brigantine Island Development Company.

Gradually Eastern Engineering began forging a place among the foremost engineering concerns in the state and country. They built a dozen bascule bridges in New Jersey, and its hydraulic and dredging equipment was to be found from New York State to North Carolina's Cape Fear River. Building everything except, perhaps, tunnels, Eastern constructed waterworks, roads and highways, locks and dams. Eaton recently finished a \$3,000,000 water filtering plant at Trenton and a \$5,000,000 sewage project in Camden, N.J. Back in 1927 they built a 77-unit village of homes near Haddonfield. Bridges, steelwork, Brigantine water supply, and many more projects testify to their skill. Taking 21 million cubic yards of muck from the Schuylkill was

nothing compared to a present contract in connection with extending the New Jersey Turnpike to the Hudson Tunnel. The fill for this is taken from New York Harbor, right under the nose of the Statue of Liberty, after first removing millions of tons of muck from the bottom to get the sand—a \$4,000,000 contract." Eaton is a new and active member of the Board of Governors of the Atlantic City Hospital, and is a member of the Chamber of Commerce and of Rotary. In April he began a job in Auburn, Pennsylvania—he has no idea of "retiring." Chick and his wife and their youngest son live at 4511 Atlantic Avenue, Atlantic City, and they have three other children who are married.

Selden E. Rockwell, age 72, a graduate in mechanical engineering with our class, died on March 13, 1955, at his home in Santa Cruz, Calif. He was a graduate of Yale University in 1904 with the degree Ph.B. He worked in dam construction during his entire career, being associated with several different companies and projects and joining the United States Bureau of Reclamation at Denver, Colo. in 1930, and remaining there until his retirement in 1945. During this period he was one of the supervisors of construction of the Hoover Dam and of several other large dams in western United States. In 1946 he moved to Santa Cruz. After his retirement he continued to do occasional consulting work. A letter dated May 7, 1955, that I received from Selden's widow, Mrs. Delia Rockwell, as the result of a letter of sympathy that I had written to her, reads in part as follows:

"We went to India in the summer of 1953, where Selden was employed by the Punjab Government to design the Bhakra Dam. Early in 1954 his health became so poor that he had to request a medical discharge of his contract, and we returned home, stopping on our way to attend Selden's 50th class reunion at Yale in New Haven, which I know he enjoyed very much. After we reached California his health seemed to improve a little, and we thought he was going to regain his strength, but on March 3 he suffered a heart attack and was taken to the hospital and placed under oxygen. He improved enough so that we could bring him home on March 11, with a nurse, oxygen, a hospital bed, and so forth, but it had all been too much for his undermined constitution, and he succumbed on Sunday morning, March 13. Our daughter, Mrs. William B. Brandenburg, lives in the San Francisco Bay area, and I may eventually decide to go there to be near her, but here in Santa Cruz (at 131 Easterby Street) I am surrounded by friends and in a comfortable home, so I hesitate to make a change too hastily."

Ralph Herbert Hall died on September 30, 1954, after a long illness caused by a bad heart condition. After leaving the Institute, having taken the course in mechanical engineering, he worked for various firms as foreman, designer, maintenance engineer, apprentice instructor, and factory superintendent until 1929 when he became a member of the State of Connecticut Board of Education, being coordinator of apprentice training

in the State Trade School. He was obliged to retire from this position because of poor health on January 1, 1954. He is survived by his wife, Mrs. Hattie G. Hall, who with their son, Raymond H. Hall, lives at 49 Francis Avenue, Newington, Conn. A married daughter, Mrs. Rudolph F. Schwager, with her husband and two children also lives in Newington. Some of the above information is taken from a note that I received from Mrs. Hall as the result of a letter of sympathy that I had written to her.

Through replies received to the announcements that I sent out last May regarding our reunion in June, I learned that the following classmates have retired from active business or professional duties: W. H. Bradshaw, 6 Hillandale Drive, New Rochelle, N. Y.; Carl Brewer, 708 Cleveland Avenue, Ishpeming, Michigan; Tucky Noyes, 7 Dayton Street, Augusta, Maine. Maurice Pease of Lincoln Lane, New Britain, Conn., formerly vice-president of Stanley Works in that city, is still retained by them as a consultant. Charles E. Baker is president of Charles E. Baker, Inc., manufacturer's representative, at Atlanta, Ga. His home is at 1158 Avon Avenue, S.W., in that city. Edwin Richardson of 715 West Clark Street, Redlands, Calif., is project engineer at Norton Air Force Base. Mickey McChesney of 411 Bryn Mawr Avenue, Bala-Cynwyd, Pa., is manager of the street lighting division of the Welsback Corporation in Philadelphia.—BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

• 1909 •

We regret that in the last two numbers of *The Review* there were no 1909 notes. We did our best but none was forthcoming. However, thanks to Jim's class letter of April 20 and also to natural causes we have just received an abundance of material. First we should compliment Jim on the "homely" tone of his letter. We have sent for and received the book of Dr. Compton's speeches as he recommended and suggest that you all do the same.

Some time ago we asked Art Shaw, I, to tell us about the Alumni Council on which he has so ably served as Class Representative for 28 years. He writes as follows: "Some time ago you indicated that some of our classmates might like information about the Alumni Council and the duties of the Class Representative on the Council. The latter is the job which the class has given me since 1927 and which I have found to be a most pleasant assignment. The Council consists of the five latest living ex-Presidents of the Association, one representative from each class, and one from each local alumni club. Seven regular meetings are held each year. These are dinner meetings and in addition to routine business, a guest speaker discusses some pertinent subject. Often the speaker is from the Faculty and outlines some new and interesting feature of teaching or research. Frequently also the President of the Institute addresses us, bringing us up to

date on academic and administrative progress at M.I.T.

The Council provides an active representative group always available to deal from time to time with matters in which the Alumni can cooperate with the Institute. There are numerous standing and special committees relating to undergraduate activities and other concerns of the Alumni Association. It is gratifying to be a part of this stand-by organization and interesting to be kept in touch with doings at M.I.T. The social contacts at frequent intervals with the typical group of loyal Alumni who attend these meetings are stimulating. The secretary keeps an attendance record and I suspect that if too many unexplained absences occur, the class officers may receive a discreet suggestion from the Alumni Office that a change in the class delegate would be advantageous! I hope to be able to maintain a satisfactory record!"

King Bullens, III, is one of our most faithful correspondents. As we have told in earlier notes, King and May have a lovely home called "Homewood Gardens" in Southern Pines, N. C. He writes: "You certainly have been busy and more power to you if that's what you want. For my part, I'm content to be out-of-doors, either golf or gardens, as much as I can. Recently, however, I've been going through the hundred and one things (or maybe it's more) in transferring legal residence from Pennsylvania to North Carolina, working out the many tax angles, taking driver's exams, and so on. Having two places to look after and our son no longer in Pottstown was getting to be just a little too much."

Recently Max Weill, II, sent us an enlarged kodachrome of the group at Chatham Bars Inn which is an artistic supplement to the black and white picture taken by the official photographer. An excerpt from his letter is as follows: "Although we have been to California many times, for that is where I come from and where our daughter now lives, we never have traveled via the Canadian Rockies which everyone tells us are magnificent. You no doubt brought back some pictures which we hope to have the pleasure of seeing in the not too distant future. Speaking of pictures, I am enclosing an enlarged color copy of the one I took at the Reunion last summer at Chatham Bars Inn and I have a few small ones of the same picture; also, some small ones of the golf group and will be glad to send either of these to anyone interested. I most certainly would like to attend some of your meetings in Boston and enjoy the good fellowship but distance prevents. Nevertheless, please give my best regards to everyone at the next gathering. Helen and I are looking forward to a trip to England, the Land of the Midnight Sun, Scandinavia, Holland and Belgium. We are flying over on June first and will be gone two months."

Frequently in these notes we have told of Steve, X, and the progress of his work as editor of the several volumes of the successful *Pulp and Paper Manufacture*. He submits his latest report as follows: "Jim Critchett's tear-jerking appeal even started my fountain pen leak-

ing! All I can report is that the fourth and last volume of *Pulp and Paper Manufacture* (McGraw-Hill Book Company) has been issued. This completes my work as editor on a job that began in 1918 and which has involved the production of five volumes of the first series, *The Manufacture of Pulp and Paper*, two revisions of Volumes three, four, and five, a French translation of the five volumes, and the four volumes of the new series: 20 volumes in all.

This unusual project was organized, financed and managed by the Joint Textbook Committee, comprising three representing the Technical Association of the Pulp and Paper Industry (T.A.P.P.I.) and two representing the Technical Section of the Canadian Pulp and Paper Association. The early operations were based upon a round sum of \$57,000 contributed by the North American paper manufacturers. The Committee has spent some \$115,000 and still had a neat balance of \$4,000 on January 1, 1955. This seeming miracle is the result of over \$61,000 in royalties on the sales of over 51,000 volumes of the first three editions and over 19,000 sales of the first three volumes of the fourth edition (N.S.). More than 500 persons have contributed manuscripts, advice, and illustrations. Editorial travel has more than equalled the circumference of the earth. Manuscripts and correspondence made a pile over ten feet high. It is quite a relief not to have my desk piled with proofs, as this job has all been 'home work.' Now I am off to a papermakers' convention in Victoria, B. C., and visits to two new mills on Vancouver Island."

Just a few Sundays ago John, II, and Margaret Davis and Muriel and I visited George, II, and Marcia Wallis at their colonial home in Wenham, Mass. The house was built along in the seventeen hundreds, was bought by Marcia's grandparents, and subsequently owned by her parents. It is most attractive and retains all the features of old New England houses. The land comprises a field sufficiently large for two or three long holes of golf. The house next door was built by the grandparents and George and Marcia's daughter and her family now occupy it. George and Marcia were schoolmates in the Wenham schools and now have returned to the old homestead. On a shelf in one of the cupboards we saw an attractively designed plaque presented to George in 1950 with the following inscription: "In Appreciation of his Service to the Dairies Industries Supply Association." Also on the mantel was a golf trophy, a small statue, won by George at a golf tournament in Geneva City, Wis., on September 25, 1947.

Speaking of John Davis, we have frequently told of his accomplishments in the realm of art. Recently, one of his paintings, entitled "Lone Tree" was among those on exhibition in the window of the Cambridge Trust Company at Harvard Square under the auspices of the Cambridge Art Association Gallery. It depicted a small tidal cove with a rocky shore and there was a single tree standing out prominently from one of the rocks.

Orville Dennison, Secretary of 1911, sent us a clipping from the Cleveland Plaindealer, headed by a picture of Morse W. Rew, I. It refers to him as the "prime builder of Cleveland's rapid transit." The clipping is so long that we can only quote excerpts. "When they broke ground for rapid transit three years ago Morse Rew pitched away his calendar and clock to become a seven-day, all-hours working man. An engineer on paper he quickly schooled himself as an able diplomat, negotiator, expeditor and lawyer without portfolio. All these skills were needed for the building of the challenging \$30,000,000 high-speed rail lines . . . He is an engineer with that rare knack of understanding the layman's point of view and is not impatient when the unlearned want him to explain that two and two make four . . . The rapid transit's high-platform cars with no step-up-step-down loading and unloading can be credited to Rew and the public will see why after the cars are operating. Behind Rew are 46 years of engineering experience dating to his graduation in 1909 from Massachusetts Institute of Technology."

We have just received word of the passing of Lewis H. Johnson, VI, in Rockland, Maine. He was 69 years old. The Boston Globe states that he was a "retired Bell Telephone Engineer who helped invent the dial telephone." Owing to the proximity of the deadline for these notes, we must postpone until fall further details of his life and accomplishments. We have written to Mrs. Johnson extending to her the sympathy of the Class.

This is the last number of The Review until November and the class officers wish all of you a most pleasant summer.
— CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: HARVEY S. PARDEE, 549 W. Washington Street, Chicago 6, Ill. MAURICE R. SCHARFF, 366 Madison Avenue, New York, N.Y. GEORGE WALLIS, Wenham, Mass.

• 1910 •

It is with sorrow that I have to report the passing of three of our classmates. I recently received a letter from Frank Bell enclosing a letter from Mrs. Fitzwater which follows: "John passed away March 21. He had an operation in August for cancer of the lung which was successful but the poison got into his blood stream and there was nothing they could do for him. He was so sick and miserable for so long we could not want him to live on, but the girls and I are sad without him. He was a wonderful husband and father."

Dan Gibbs passed away April 19. Dan had been in ill health for more than a year. The following is from a clipping from a Waltham, Mass., newspaper sent to me by Phil Burnham: "Daniel W. Gibbs, 68, of East Auburn, Maine, a native of Waltham, died in a Lewiston, Maine, hospital Tuesday of a heart seizure suffered earlier after his automobile had been involved in a minor accident. An Auburn resident for 15 years, he was employed as an architect for Alonzo J. Harriman, Inc. of Auburn. A graduate of Waltham High School and M.I.T. with a

• 1911 •

degree in architecture, he designed colonial style homes in Waltham and surrounding communities. He was a member of St. Michael's Episcopal Church, Auburn, Auburn Grange and Stanton Bird Club. During World War I he was a captain in the Army Engineer Corps. He leaves his wife, three sons, Daniel of Hingham and Joseph and Timothy of Auburn, and five daughters."

I have just received a notice without any details that Roy Abbe passed away May 6. I do know that he retired three or four years ago and was living in Newburyport, Mass.

All of us expected to see Allen Gould at the Reunion in June but the following letter gives the reason he will not be on hand: "I had every intention of being at Chatham Bars but Barbara and I recently survived a head-on collision which definitely will keep her at home and I doubt very much if I will make it. She has had two and a half weeks in the hospital and will be wired up for some time longer but due to some wonderful plastic surgery we feel now she will be normal again. The other fellow went to jail but it doesn't help her. Was out in California for a while in March and had a good visit with Gordon Hawes '10 in San Francisco during which you were 'favorably mentioned.' Apparently Gordon has kept up some contact with you over the years. Carries the years well (a bit greyer like the rest of us), and still has a specialist connection with the Bechtel Corporation who do a tremendous business on the West Coast and overseas. Give my greetings to the classmates. Wish I could check on them first hand and there is still a slim possibility. Expect anyway to sniff some salt air at Edgartown the latter part of July."

Phil Burnham writes as follows: "I retired from the engineering department of the Du Pont Company a couple of years ago. Since then have kept out of mischief by working full time for the Wilmington Blueprint Service which is owned by old friends and in which I have a very small interest. My job consists of selling drafting room supplies. Sorry that I will not be able to attend the Reunion but am looking forward to the 50th."

Earl Pilling has retired and writes as follows: "I still seem to pass out every once in a while for a few hours at a time. It seems that I am at times not getting proper blood circulation in my brain although it cannot be properly called a cerebral hemorrhage but rather a partial stoppage of blood flow. Awfully interesting state to be acting semi-normally but not knowing what you are doing and not remembering a single detail when you come back to life! Fortunately it does not recur very often but I never know when to expect it. It is believed that I will improve now that I have turned the office over to two of the older employees, one with 29 years of service here and one with six years. Let them do some of the worrying although they never will do the amount of fussing I have done. Some day you will find you will wish your life work on others and you will not be happy about it." — HERBERT S. CLEVERDON, Secretary, 120 Tremont Street, Boston, Mass.

We were both grieved and shocked to learn of the sudden death on April 22 of J. Burleigh Cheney, II. Under the caption "Ex-'Copter Expert Dies While Walking," the Boston Post story read: "J. Burleigh Cheney, 66, of Cranston, R. I., organizer of a company which for several weeks in 1947 operated a helicopter service between Logan International Airport and the roof of the Boston Motor Mart building, died yesterday of a heart attack while walking on a street in Cambridge. For the past decade he had attempted to promote helicopter operation on a commercial scale throughout New England."

For a number of years he was located in New York City, where he operated his own Cheney and Company, with offices at 280 Madison Avenue. Returning to New England in 1929, he settled in Providence and Cranston, R. I., and was connected with two aviation companies, successively: Providence Skyways, Inc., and Eastern States Helicopter Service, being president of the latter. Two years ago he came to Boston, where he was acting in a consulting capacity and living at the Engineers Club, 96 Beacon Street. He was a member of Phi Beta Epsilon fraternity and is survived by a wife, the former Marion Cole of Cranston, R. I., and a daughter, Mrs. T. W. Coldstone of Burbank, Calif. He was a loyal and active Elevener and we shall miss him.

We have just received a clipping from the New York *World-Telegram and Sun* of March 12 — a feature story, titled: "Irving White Wilson: Mr. Aluminum." The sub-caption reads: "Here's a Man You Seldom Read About Who Ranks as the Master-Mind and Supersalesman of A Billion Dollar Business — Alcoa."

"Behind a massive, aluminum-legged desk in a modernistic, air-conditioned office on the 30th floor of Alcoa's showcase skyscraper in Pittsburgh sits a left-handed, poker-faced bridge devotee with a common name and an uncommon job," writes Victor Free, Scripps-Howard writer. "He is a power in big business, but he seldom makes the headlines. His modesty has left him almost a stranger to the public. He appears austere and grim, but underneath he is kind, gentle and tolerant. In his head is a keen, analytical, steel-trap mind; in his heart is a great affection for people. He was christened Irving White Wilson. Fifty-five thousand associates and employees call him Chief."

Continuing, the article says that when he graduated from M.I.T. in 1911 he applied for a job with Alcoa, "which he thought would be temporary" — in fact it is reputed that he said: "I figured I had missed the boat and was only sorry that I hadn't been able to join the company in its greatest era of expansion." However, during the intervening years Alcoa's \$21,000,000 annual gross has grown to \$700,000,000 and Bun now says: "We are just beginning to develop markets and serve them. In 1911 we didn't visualize the airplane, nor multi-colored aluminum buildings, nor the increasing uses of aluminum in many forms."

In his boyhood, Bun had hopes of following his maternal grandfather into medicine, but it was our good fortune to have him shift to electro-chemistry and join our Class at M.I.T. He went to work at the Niagara Falls plant of Alcoa and soon was transferred to New Kensington as an assistant on research and plant control. Within 10 years, during which he was a Major in the Chemical Warfare Branch of the Army in World War I, he had become general superintendent of the company's reduction plants and then 10 years later, at 41, he was made vice-president in charge of operations, the youngest officer in the company. He was voted to the board of directors in 1939, became senior vice-president in 1949, and president in 1951.

According to staff writer Victor Free, Bun has divided his life into three major channels: Alcoa, his family and bridge. "Fortunately, he has a faculty for deep concentration, a photographic mind and an amazing memory," the story continues. "He detests verbosity, never wastes words, discards clutter and seeks truth based on reason. He holds a staff meeting every Friday, believes in flexibility and fluidity in operations, and has said to his employees: 'I don't want you to work in a little box — I want you to work for the general good of the company.'

"Chief Wilson has no pet formula for success, but a deep-rooted philosophy that revolves around the dignity of an individual. Call it morale, *esprit de corps* or what you will, the Chief believes it has meant a lot to Alcoa. His competitors think Alcoa has been fortunate in having Chief Wilson at the helm. There's no question the Chief is a gambler — but not in the race track sense of the word. Rather it is courage and daring based on exhaustive research and a confidence in the future of America as a land of free markets and private enterprise.

"The same qualities are apparent in another great love — bridge. In that game he finds complete relaxation and will play until his partners and opponents doze off from exhaustion. His most famous last line is: 'Let's have another rubber.'"

Regarding his family life, the story tells of his marriage to the former Katherine Whalen in Massena, N. Y., in 1917. They have three married daughters, living in Pittsburgh, Pa., Wellesley, Mass. and Leicester, Mass. They also have what Bun claims are six of the best grandchildren in the world. He likes vacations at the seashore (we'll be looking for you at Snow Inn, Harwichport on Cape Cod, next June for our 45th, Bun!) with his family, swims, fishes, "if there are fish to be caught, but not just to wet a line."

Among his high honors are the Presidential Certificate of Merit for his war effort contribution, awarded in 1948; his being named by *Modern Metals* as "Man of the Year" in 1950 and "Great Anticipator" for his foresightedness in the aluminum industry by *Iron Age* in the same year; and his selection in 1954 as "outstanding industrialist" by the Western Pennsylvania chapter of the Society of Industrial Realtors.

He is a trustee of the National Industrial Conference Board, a member of the

advisory council of the Alleghany Conference on Community Development, a director of the Pittsburgh branch of the Cleveland district Federal Reserve Bank, a member of the Protestant Episcopal Church, but "his greatest inspiration in a civic way in recent years has been his job on the board of managers of Children's Hospital of Pittsburgh as a member of the executive committee."

In conclusion, the article says: "The white-haired, blue-eyed Chief makes speeches only when he has to; doesn't enjoy the limelight, actually avoids it when possible. He writes left-handed, eats right-handed, smokes king-size cigars with either hand. At cocktail parties he prefers Scotch, but very little of it. His taste in clothes is conservative; he likes grays and blues, the same basic colors of his aluminum building skins. He has lost only a half day's work because of illness during his nearly 44 years with Alcoa, gets periodic checkups, fancies red meat and fresh fruit, scorns diets, long walks and setting-up exercises. 'I don't want to make a hardship of being well,' he grins." A wonderful tribute—to a wonderful guy! And how nice it is to hear such truths while you're still hale and hearty, Bun!

Ed Woodward, VI, reports that he likes the Pacific Coast immensely. He was transferred there from Chicago in February to become Pacific Coast editor (mechanical) of *Railway Age*. Ed started his railway career on the Boston and Maine here in New England and worked on the New York Central before joining the Simmons-Boardman Publishing Corporation as associate editor of *Railway Mechanical Engineer* (now *Railway Locomotives and Cars*). For two years (1917-1919) he was with the Railway Engineers Corps, U. S. Army, and since 1923 had been western mechanical editor of *Railway Age* at Chicago.

Fred Daniels, VI, led the trustees and other dignitaries into Alden Memorial Auditorium in Worcester on April 30 for the installation of Arthur B. Bronwell as president of Worcester Polytechnic Institute. Reports also have it, according to the Worcester *Telegram*, that Fred is in line for the chairmanship of the redevelopment agency of five members which will be named soon to work more or less full time on the Salem street redevelopment project in that city.

Met O. W. Stewart, I, at the diocesan convention of Massachusetts in Boston earlier this month (May 4), he being a delegate from Christ Church, Hyde Park and I from St. Andrew's Episcopal Church here in Framingham. Speaking of Framingham, I am once again a "summer bachelor" for Sara went to our summer place in Cornish, Maine, the latter part of April to remain until after Labor Day. I get up weekends from time to time and if any of you are in Cornish, drop in at "WellswEEP" where the latch-string is always out. O. W. said that he and Gertrude expect the contractors in mid-May to come to their Kingston, Mass., home to start some alterations "and before long we'll plan to be there steadily, meanwhile continuing to 'commute' between Hyde Park and Kingston."

Anent Harold Babbitt, XI, and his

wife removing to and from the Pacific Northwest, he writes: "Yes, I did retire from my 'chair' of sanitary engineering at the University of Illinois at the end of the last school year and long having had the desire to live in Seattle, where the scenery, climate, and other conditions had always been most pleasant to Elma and me, we came out here to live and established ourselves permanently, as we thought. However, the summer was inclement, the fall was cold, and the early winter none too promising, so we bought a house trailer just before Christmas and started wandering. It is my understanding that house-trailing is none too respectable a pastime (in the minds and eyes of 'proper Bostonians'), but here in the 'wild and wooly', particularly in the Southwest, it's THE THING to do. We did it.

"We crossed the Mexican border at Nogales, Arizona, on January 7 (my birthday) with 495 other trailers in the world's largest trailer caravan, for a tour of Mexico. The story of that trip has appeared in so many publications that its repetition here would be trite. However, it was a great trip and I strongly recommend house-trailing through Mexico. We had the bad judgment to arrive back in Urbana, Ill., on the calendar's first day of Spring (March 21) and to run into the worst blizzard of 65 years of record and a week of winter worse than had been experienced all winter. Shortly after the storm blew over and spring really came, there came also an appointment from the United States Foreign Operations Administration (which I accepted) as "Educationist—sanitary engineer" for a two-year tour of duty in Rio de Janeiro. It was a hurry-up affair, so we hastily sold our trailer and car, flew out to Seattle to sell the apartment, and now in late April we start for Washington, D. C., for a four-week orientation course before proceeding to the post in Rio. (This 'we' you see throughout this letter includes Elma, my wife, who is doing all of these things with me.) For an 'old man' who has been thrown into the discard, it's all quite thrilling to be very much on the active list again. Until further notice, address me at 201 Civil Engineering Hall, Urbana, Ill., for forwarding."

Ed Pugsley, VI, writes that he has been retired now for almost five years from Winchester Repeating Arms Company in New Haven, Conn., although he is still on a consulting basis with the company and has been asked to travel abroad quite extensively. "I had two trips over England and the Continent in 1950, one for the company and one connected with N.A.T.O.; a trip to Japan in 1953, returning around the world; and a couple of other trips through Spain, Portugal and the rest of the general Continent," he writes.

"My official residence is still 76 Everit Street, New Haven, Conn., and mail addressed thusly will always be forwarded. We have two other places, one a summer home on the shores of Long Island Sound at Leete's Island, which is a section of Guilford, Conn. (which accounts for the RFD #1, Guilford current mail address). I also own and operate a small plantation at Monticello in north-

west Florida, where we have just been spending about three months. This is in the old plantation section of the state, far removed from the tourists' meccas of south Florida. Admiral Luis deFlorez, II, had lunch with us on our Florida plantation this last winter, as he flew over to Tallahassee to spend the day with us."

Harry Tisdale, V, reports two business changes of address: Frank Russell, II, now at 347 Madison Avenue, New York 17 and Isidore Spector, I, at 120 Liberty Street, New York 6. "Our household has been abruptly upset," he writes, "because my Mother fell early April 23 and broke her hip. She spent two weeks in the hospital and now that she's back at home is picking up fast and keeping us all on the jump. It takes two of us to get her out of bed and sometimes three to get her back and in a comfortable position. She enjoys relaxing in a wheel chair. Needless to say Grace and I are completely out of circulation until Mother is able to walk again. The young lady will be 89 on May 24 and her sister will be 81 on May 27—so we are going to have a party for both of them."

We have had mail returned from Ed Kennedy, III, addressed to him at 29 Clinton Street, Brooklyn, N.Y., and from Lloyd A. Patrick, IV, addressed to him at 157 Circuit Avenue, Winthrop 52, Mass. If any of you know where these two classmates have gone, please "Write to Dennis." From the Alumni Office we learn that Alberto L. deRomana, VI, has had his first name legally changed to Albert. He is located at Santa Catalina 208, Arequipa, Peru, South America.

Just learned in a letter from Bert Fryer, VI, that Mary Barker, widow of the late Charlie Barker, VI, died on May 4 and was buried later at Oakland, Calif. "She was a very brave woman," Bert writes, "and certainly earned her final rest in heaven. We had a day with her in late 1954 at her home in Berkeley, on one of our trips south, and she was only then really getting to feel like herself after that terrible auto accident that took Charlie 24 years ago. Both of their boys are now married, each having a daughter, and both families are living in the Bay area of San Francisco.

"I am just now cleaning up my business, having sold out all of my interests in British Columbia and California. Even my engineering business I am passing along to two young men and I will act as consulting engineer for them on their dry kiln work. My farm hobby has grown to be an octopus and this year we are farming over 24 acres of strawberries and handling some 200 acres of corn production, that we pack and market—so I'm taking steps to get out of this, as it takes too much out of me and is not too lucrative an investment. Any classmates here in mid-June will be right in the middle of our strawberry shortcake season and most welcome at our ranch here in Carnation, Wash. Too bad the 1911 get-togethers are so far away, or I could furnish plenty of fruit for them, too far to ship fresh fruit from here as yet—but the day may come! We're looking for a banner season of berries but the cold spring has made corn planting unusually late and we may not do so well cornwise. That's the beauty of

farming: You might better play poker or the races as far as the odds are concerned. We may get East sometime this year and we'll look you up if we make it. Our best to all at Alumni Day!"

Look elsewhere in the main section of this month's issue, Eleveners, for the record of our grand and glorious Class in this current Karl T. Compton Memorial Alumni Fund. It will make you prouder than ever of being a loyal Elevener! And now to all of you a pleasant summer and next fall we'll start things in earnest for trying to get a record attendance at our Forty-fifth Reunion to be held once again at that fine hostelry on Cape Cod: Snow Inn in Harwichport. Make your plans now for being there June 8-9-10, 1956; then on to Alumni Day at the Institute on Monday, June 11. — ORVILLE B. DENISON, *Secretary, Chamber of Commerce, Framingham, Mass.* JOHN A. HERLIHY, *Assistant Secretary, 508 Riverside Avenue, Medford 55, Mass.*

• 1914 •

We note that Dean Fales is still on the job, following his old love. On May 19 he spoke at a meeting of the M.I.T. Boston Luncheon Club on the subject of "Automobiles — Style, Power and Safety." He was listed on the meeting notice as Research Associate, Mechanical Engineering, M.I.T., and member of the Advisory Board, Massachusetts Division, American Automobile Association.

A change of address notice indicates that another Fourteener has joined the ranks of the retired. Alex Long retired from his position as vice-president of the American LaFrance and Foamite Corporation in Elmira, N.Y., on the first of the year. His home address continues to be Elmira.

Charlie Fiske recently took a week's business trip to Bogota, Colombia. While there, he called on some of his banking connections and reports meeting Mr. and Mrs. John O. Bower. Mr. Bower, Class of 1922, is manager of the Texas Company operation in Colombia. They were guests at a luncheon which the American Ambassador, Phillip W. Bonsal, gave at the Embassy. Mr. Bower indicated that he was interested in getting a Technology Club started in Bogota before too long.

News is somewhat scarce this month, but, if you haven't already done so, you can help make news by sending in your bit for the Alumni Fund, which, as you know, goes this year toward the establishment of the Compton Memorial Laboratory. Last chance. — H. B. RICHMOND, *Secretary, 275 Massachusetts Avenue, Cambridge 39, Mass.* H. A. AFFEL, *Assistant Secretary, 120 Woodland Avenue, Summit, N.J.*

• 1915 •

As these Notes are being written about the middle of May, it won't be long until we meet for our Fortieth Reunion. Full details will be in the November Review. It's going to be a grand and glorious feeling to meet again with 75 or 100 Classmates to renew old friendships and review our nostalgic past. The committees are doing an outstanding job: Max and Weare for making arrangements at Coonamessett; the Area Key Men in

arousing interest in our widely scattered classmates; Pirate Rooney and Henry Sheils in supervising; Sam Eisenberg and Frank Murphy for transportation help; Al Sampson and Barbara Thomas for the gay Cocktail Party for Ladies, and I can hardly wait to see the assortment of "Loot" that Ben Neal and his committee of Louis Young and Al Sampson have collected. I understand they have even a give-away bag to carry the loot home in. What a team, all working together selflessly to put over our Reunion successfully. Full details in our November column.

Many of the Area Key Men have sent me copies of their letters to their lists and interesting personal notes. Dave Hughes from 7222 Senalda Road, Los Angeles 28, Calif.: "Brute Crowell and I both feel that it is too soon after graduation to attend a reunion so far from home. We are planning on attending the Fiftieth if we can find some one to push our wheel chairs." A great sense of humor and I hope we'll have roller-bearing wheel chairs for the old gentlemen who have not been rejuvenated by the West Coast's famous elixir of youth.

Phil Codwise, 11 Argonne Drive, Kenmore 11, N.Y.: "I do wish that I could get down to the Reunion in June, but unfortunately, I have another engagement at that time. My company is sending me to a convention at the Chateau Frontenac in Quebec City and I hardly think you would wish me to miss that. Thanking you for your thoughtfulness and my best regards to all the boys." An active Area Key Man, Ken Boynton has one of the "swankiest" retired addresses we know: Vanderbilt Road, Biltmore, N.C. He writes: "When we returned from Florida last Friday, I could have called up several on my list as we passed through most of the towns. I now appreciate more than ever the work you have put in for the Class. Gosh, these letters alone must have meant almost a full day's work. Of course, you perhaps type a little faster than I do, but think of the practice you've had. And I was surprised to find so many classmates located in this area and hope to see many of them in the future either here or where they reside. Had a grand time in Florida but the fishing was not very good. But my luck was good enough so that we plan on going back next year. By the way, we were on Captiva Island. You, George and Henry will be busier than bird dogs from now 'til June and good luck to you all. The Class is depending on you. Hope to see you down here one of these days. Best regards to all."

Ben Neal gives my leg a slight pull on that winter trip that Fran and I had to Florida: (What a job Ben and his committee are doing on "loot.") "How does a guy get a chance to spend three weeks in Florida? I have been trying to do that all my life. Lauretta and I did fly down to Delray on March 30, flying back on April 5. All the vacation they'll let me have! Sorry we were across the state; otherwise we sure would have dropped in to see you. It's been a lot of fun writing to these fellows on the Reunion, and it's going to be more fun to see these fellows in June — those who will be smart

enough to come on." And Sam Berke adds a line from his Deep Lake Farm, Lakeview, Conn.: "I trust your trip to Florida was restful; I too was sorry that we didn't see each other sooner. Imagine being not only on the same train but in the same car! Fishing was not too good but I had a nice visit and some good weather. My best to you and Frances and I am certainly kicking myself about missing the Reunion." Unfortunately he will be in Europe in June but he has worked hard for the success of the Reunion and we will all miss him. Johnnie O'Brien was severely injured in an automobile accident in suburban Boston and was laid up in the Choate Memorial Hospital in Woburn, Mass. He's recovering steadily and hopes to be with us at the Reunion. It's still difficult to take Johnnie out of a play!

It's very sad to recall the passing of another classmate: Wallace S. Thomas died January 15, 1955 at Bethesda, Md. He was Deputy Director of Export Supply in the Commerce Department's Bureau of Foreign Commerce. A native of Springfield, Ohio, Wally headed the Thomas Manufacturing Company there before entering the Government Service in 1933. He started in the Home Owners Loan Corporation office in Columbus, Ohio, later moving to the Department of Agriculture. He also served with the Board of Economic Warfare and the Foreign Economic Administration, predecessor agencies of the Bureau of Foreign Commerce. He served as a Naval Reserve lieutenant in World War I. He is survived by his wife, Leone Thomas. The sympathy of our Class goes out to Mrs. Thomas.

Have a happy summer — write soon — read all about the Reunion in November. — AZEL W. MACK, *Secretary, 40 St. Paul Street, Brookline 46, Mass.*

• 1916 •

We are very proud to report the appearance of two of our classmates on the cover of recent issues of *Business Week*. In the March 5 issue, Dr. Robert E. Wilson was featured on the cover along with Alonzo William Peake. Dr. Wilson is the chairman of the Board of Standard Oil of Indiana and Mr. Peake is the president. There was a story connected with the picture entitled "How Two Top Men Work as a Team." It described the "two-boss" system which has been in effect in this company for the past 10 years, a plan which started at the suggestion of Dr. Wilson. Under the system, the finance department, research and development, law, the company secretary, and industrial and public relations are the responsibility of Dr. Wilson. Mr. Peake takes the rest — refining, production, supply and transportation, sales, long-range planning. "The company also splits its operating subsidiaries between Wilson and Peake. Wilson has American Oil Company and Pan-Am Southern Corporation serving the eastern and southern U.S. Peake overseas Stanoline Oil and Gas Company and Utah Oil Refining Company" . . . "On the surface Wilson and Peake have nothing in common except the confidence each has in himself."

The front cover of the April 30 issue of

Business Week showed a picture of Ralph Davies with the caption: "R. V. Davies is talking to his customers' customers." This referred to an article entitled "Alcoa faces up to a new era in selling." Ralph is the sales vice-president of Aluminum Company of America. Perhaps the nub of the problem can be found in these two statements which appeared in the article: "Like many other manufacturers, Alcoa has discovered that more and more the initiative for developing new markets lies with the manufacturer himself, who must presell the market by going straight to the consumer. Like Monsanto and other producers of basic materials, Alcoa now realizes that it must find some way to seek consumer identification of a material that has lost its identity in being made into something else."

Tom Berrigan was among those who attended the 1955 Spring Meeting of the N. E. District of the American Society of Testing Materials held at the University of New Hampshire in Durham, N.H. Irving McDaniel recently made a trip by car from the West Coast to the East Coast, spending a couple of weeks in Washington, D.C., then stopping in New York and passed quickly through Massachusetts to New Hampshire before returning to Massachusetts for a short stay and then back to California. His schedule was such that he had to return home just before the reunion and had to miss being with the fellows on the Cape. Dr. Vannevar Bush was awarded honorary membership in The American Society of Mechanical Engineers at the society's recent founding meeting celebration. And also, for the record, Dr. Wilson recently received another LL.D., this one from Washington University, St. Louis. He now has 10 honorary degrees. Getting back to Dr. Bush, he was the principal speaker at the banquet of the Founding Anniversary Meeting of the A.S.M.E. in New York in February, and his talk was reproduced in the April, 1955, issue of *Mechanical Engineering* under the title "Communications - Where Do We Go From Here?"

Cy Guething writes: "Sorry but won't be able to make the reunion again this year because at that time we shall be moving to our final home (I hope) at 582 Kennesaw Avenue, Birmingham, Mich. Nicer home and larger lot for more garden and work. The first possession moved was a granite bird bath and it has a place of distinction in keeping with its beauty and quality, being of Chelmsford granite. Will see you all in 1956 for real sure, and our kindest regards to you." From the returns which were received in answer to our letter on the 39th reunion, it looks as though it will really be a big turnout. For instance, Arthur Keller noted on his card: "Hawaii is too far from New England. I hope to attend next year as my nephew is to graduate." We regret to report that some who had hoped to make the 40th have since passed on. We were saddened to learn that John Burford passed away on April 3, 1955. Your Secretary has conveyed the sympathy of the Class to his widow and family.

Chuck Loomis sends along a bit from a letter that he had received from Steve Brophy. It seems important that the Class should know of Steve's confidence in the

magic numbers 1916. Steve's letter went something like this: "This is the first opportunity I have had to write you since returning from a few weeks' vacation in Cuba. While in Havana I spotted a lottery seller who had the number 01916, so I bought the whole sheet, confidently expecting to win the million dollars. It didn't work out that way, but I am enclosing one of the certificates to prove my loyalty to the Class."

We are also indebted to Steve for a bit of information from Francis Stern. Francis disposed of his entire holdings in Stern and Company to his associates and employees in 1953 but continues to act in a quasi-advisory capacity. Recently he and Mrs. Stern spent six weeks with their children and grandchildren in Los Angeles, proceeded by motor down to the West Coast of Mexico to do some marlin fishing, then motored on to a ranch in Arizona, from there across the south to Miami, where they left their car. They flew from Miami to Nassau and spent two weeks or more cruising the Bahamas with Ben Munch'13, who has a most luxurious boat with a crew of three. Following the cruise, he and Mrs. Stern landed in Fort Lauderdale and drove home by car, arriving about the first of April. This sounds like a lot of fun and a lot of leisure, Francis, and when we get pretty postcards from Lichtenstein mailed from Portugal from our good old Secretary, Ralph Fletcher, it makes some of the rest of us feel that perhaps we are working too hard with no more fun than a trip to Washington, St. Paul, or New Mexico now and then. Perhaps each one of us might linger just for a few minutes on that notion of working too hard. It's a fine and commendable activity but even the Good Lord didn't intend that it be the only activity of man. There must be some recreation and pleasure in the schedule of man's daily life, and a period within the year when he can leave behind him the pressures of his everyday business activities, and get right down to the real joy of living. Most of us have neglected to do this for too long a time. We should do those things such as golfing, fishing, boating, and so on, which we have been intending to do for weeks, then months and then years and have kept putting them off. Much of the illness of today has been caused by a condition of too much pressure from the work load and not enough relaxation. Each of us should get out and enjoy some of that high standard of living for which people in the U.S. are noted and for which we are the object of envy by most of the other nations in the world. We've earned the right to this high standard of living. Let's enjoy it. Plan now to be at the 40th reunion.

We're signing off now for the summer months. Thanks very much for the many pleasures which you have given us in our last nine issues of *The Technology Review*. Again, your response to our requests for news has been excellent. We look forward to serving you again in the fall. In the meantime we send our best wishes to all for a very pleasant summer. Please remember to jot down the names of classmates you meet or the places you visit and the interesting things you do during

this period, and send them along to us so that when the call for the first deadline rings out in the fall we will find our mail sack filled with news for the column.—RALPH A. FLETCHER, *Secretary*, P.O. Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Laboratories, Inc., 463 West Street, New York, N.Y.

• 1917 •

Joel Campbell writes from Omaha, Neb.: "I am sorry not to have replied promptly to your letter of April 8. It reached me during a week of feverish activity, culminating in our youngest daughter's wedding on April 16. If you have been blessed with one or more daughters, you will appreciate that our normally quiet household was intensely active. The situation has been well and truly depicted by Spencer Tracy and supporting cast in the picture, 'The Father of the Bride.' Our daughter, Sara Ann, graduated from Mount Holyoke College at South Hadley, Mass., last June. She married Henry Pedersen, recently discharged from the Army and now starting to practice law. After the wedding reception, there was a family reunion dinner and surprise birthday party on the father of the bride. It was climaxed by colored movies of a recent trip to Brazil by my sister and brother-in-law. There is very little to report with respect to business activity. I am still with Bemis Brothers Bag Company but no longer active in sales. Their factory here is well located and serves a wide area from the Mississippi River on the east and as far west as Idaho and Utah."

W. W. Cargill retired from active business three years ago and is now living quietly at 1030 Amalfi Drive, Pacific Palisades, Calif.

Dean Parker has been district sales representative for the B. F. Goodrich Chemical Company, Harmon Color-Sales, for 10 years. "We were taken over by the B. F. Goodrich Company a few years ago. We make a lot of the fancy bright colors you have seen on the new automobiles in the last year or two. Recent developments in our laboratories have made these colors possible. We now have eight grandchildren, six girls and two boys. Up to a year ago, the score was six granddaughters. My older daughter in Chicago with two of them, finally produced a boy and my older son in Rochester, N.Y., not to be outdone, crashed through with the other. Our 40th reunion in 1957 should be a big event. I will make every effort to be there as I haven't been back since the 25th. We see Al Litchfield and his family quite frequently. Maybe we can drive over together."

Dutch Du Pont writes, "During the past two years I have been in Washington where I served as Commissioner of Public Roads until early this year. It has been my pleasure to have been closely associated with the work of the Governors' Committee and General Lucius Clay's Committee in evaluating the highway needs of the country and developing a program for the solution thereof. Because of the infinite number of meetings, the hours that must be spent at hearings

and executive sessions of the Members of the Senate and House of Representatives, I resigned as Commissioner of Public Roads the latter part of January and was given a special assignment as a consultant to the Secretary of Commerce during the consideration and development of the highway program. Currently, I am spending practically all of my time with the Senators and Congressmen, supplying factual data and information with respect to the legislation. It is a very interesting assignment and I make no predictions as to what will be forthcoming, or what my future status may be in Washington."

Art Dickson says, "As I review the past year for material and for the notes, it would appear that I have reached the period where the daily routine, at least to me, seems so commonplace that it can hardly be of interest to anyone. I have been rather fortunate in that we as a family have enjoyed excellent health. My son, who received his master's degree at Tech in 1949, is now back in New England after spending some time with Du Pont at Niagara Falls and the Southwest Research Institute at San Antonio, Texas. He is married and my first granddaughter was born last June. My daughter, Wellesley 1953, is making her career as a copywriter in the advertising field. She recently returned home after spending several months traveling in Europe. As you know, I am back in the engineering field with Charles T. Main, Boston, and have been with them for about five years. During most of this period, and at the present time, I have been working on A.E.C. projects, all of national importance. I am planning to take in some of the events on Alumni Day and will be seeing you then."

Newman Marsilius writes that the past year has been of the "usual type." "I spend my time going around the country more or less seeing folks that I have been associated with for many years. I also spent about four months in Florida getting some sun and swimming as well as doing a good deal of deep sea fishing. I have been able to catch a couple of large fish — sailfish and what have you. As you perhaps know I have two sons in the business. One is in charge of sales and the other is running the factory. Incidentally one son is quite active in politics. He is a State senator. The other devotes his efforts to Trade Associations. I am presently planning a trip abroad. I am leaving on May 25, and shall go to England, France, Switzerland and up to see the Midnight Sun at the North Cape off the coast of Norway. I have restricted my business activities somewhat and live a life of leisure which seems to be very pleasant and agreeable, and I hope to enjoy some more of it."

Dud Bell writes from Bristol, Pa., that "Ed Rounds is now living near here. I ran into him on some Community Chest work. Ed was doing the hard work digging up money in our county. Fritz Alt-house dropped into my house not so long ago. He is very active in the coal business and has additional interests and plans coming up. Quite often I see Harold Perry. We both offer some help as directors of the William Penn Center, which is a nonprofit organization nearby. As for

myself, I am an independent salesman working for about five or six factories. This permits some free time which enables me to again head for Europe this May. My travel there is by automobile with no reservations or definite plans. This time I'll cover southern Ireland, some of Scotland and England. Thence to Holland, where I'll drive north into Germany, Denmark, Sweden and Norway. Then back into some other countries flying home from Amsterdam. I seriously recommend this ideal loafing to the boys who need a change. It only requires a road map and an airplane ticket to Europe and, of course, a couple months of free time. A foreign language or two helps and adds to the fun." This certainly sounds interesting.

Your Secretary is also planning a trip to Europe in May, covering London, Paris, and other points of interest. Dud sent me a copy of his itinerary but our routes differ considerably. The chance is small that I will run into him but it would certainly be a happy occasion if such a meeting would come about.

Larry Davis says that one of the reasons he hasn't written more often is "because nothing particularly outstanding has happened, but there is one thing that I can say — that since leaving school up to the present date I have enjoyed excellent health. My family, consisting of a son and daughter, are both grown up and married, and I now have three grandchildren consisting of two boys and a girl. I have been in business for myself since 1922, operating three companies with headquarters in Springfield, Mass., and Hartford, Conn. My son is associated with me, and we are contractors specializing in air conditioning, refrigeration, and oil burning equipment. The '57 Reunion seems a long way off now, but perhaps it isn't as far as we think." — RAYMOND STEVENS, *Secretary*, 30 Memorial Drive, Cambridge, Mass. W. I. MCNEILL, *Assistant Secretary*, 270 Park Avenue, New York City, N.Y.

• 1918 •

In the senior portfolio of the 1919 *Technique* you will find no photograph of John Alston Clark, but who of us will forget watching him climb to the top of the little block house in the Technique Rush to grasp the wooden slab as it came through the roof? Some of us remember that he came from Clarksdale, Miss., which made it natural to find him in his home state now. The address is R.F.D. #1, Duncan. But to go back. On a spring day in 1916 he took off for World War I. Afterward I think he taught, with a noisy and devoted student following. In 1937 he joined the company of the more resolute and bold by working for Dick Wilkins at Revere Copper and Brass. Two years later he was in East Hartford with Pratt and Whitney Aircraft. In 1950, still dreaming of his boyhood Mt. Olympus, John went home. There in humility and hope he bought a 250-acre farm, the bright prospect being beef cattle. He writes that falling prices, drought, and other difficulties have made it a hard pull. "It is a healthy and enjoyable life," he says. "I had no idea how much pleasure I'd get out of working with the cattle. They are

delightful creatures; intelligent, responsive, and loaded with personality. In February when all the trees are bare and the general countryside is grey and ugly, the sight of a herd of red and white cattle grazing in a green pasture is very cheering."

By way of a beautiful postcard of the eerie light in the blue grotto at Capri, word comes from Yale Evelev who reports, "After five weeks of strenuous participation in ceremonies and sightseeing in Israel, we chose Southern Italy as a place to get some rest. But Pompei, Vesuvius, Capri have too much for tourists to see to give rest in spite of the fact that the whole trip is taken in easy stages." Sax Fletcher seems to be producing the effects of grandeur for those who take their rest by watching television. I quote, courtesy of Pete Sanger: "Sax was featured on Quentin Reynolds' show, *Operation Success*, last April 2. The interview was followed by a movie showing the designing and manufacturing operations of the J. O. Ross Engineering Corporation." Since Sax is president of the company and because April 2 was ground hog day, we conclude that his emerging into the limelight in bold splendor on that date is significant of an early spring in the baking machinery business. Another happy bit of information, reaching this typewriter by way of an editorial in the Boston *Herald*, concerns the Long Island Railroad. You will recall the grizzly drama of Bill Wyer (trustee) struggling to put the road on its feet despite the shenanigans of the politicians, despite their campaign of dishonor and defamation. He has solved the long, and at times seemingly insoluble financial problem by tax relief, higher fares, and a determination to make the road efficient through competent management. Since last August the railroad has operated in the black. This year the net income will be in the order of \$2,600,000 as against a net loss last year of \$3,542,934. Bravo, Bill!

A more unhappy side of the news is Tom Kelly's illness, which Orville Dennison called to our attention. Its nature has not been officially told us, but I suspect something like a heart attack. Acting vigorously, we wrote Madeline, his wife, asking whether Tom could receive visitors. She replied not yet, except the family, but he would be sitting up, and is expected to be able to go home by the end of May. Write him a letter. Address: 31 Jonathan Street, Gardner, Mass. A brighter bit of Kellyana is the announcement of the engagement of their daughter, Madeline Mary Kelly, to Dr. Walter Edward O'Donnell, son of Mrs. Walter J. O'Donnell of Worcester, Mass., and the late Mr. O'Donnell. Miss Kelly was graduated from Wellesley College, where she was a member of Alpha Kappa Chi Society, and received her bachelor of science degree in business from Simmons College, Boston. She is an assistant secretary to former President Herbert Hoover. She is on the board of directors of the New York Wellesley Club and was recently chairman of its junior group. She is also a member of the Women's National Republican Club. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey, N.H.

• 1919 •

Art Johnson, Vice-president of the American Mutual Liability Insurance Company, addressed the March meeting of the Purchasing Agents Association of Connecticut on the subject, "What You Need to Know about Standards." Art was safety engineer for American Mutual for 30 years and is currently chairman of the American Standards Council, member of the Health and Safety Committee of the National Association of Manufacturers, and is on both the Industrial Conference and the Traffic and Transportation Conference of the National Safety Council.

Dean and Mrs. Webster are touring abroad this summer — sailed June 7 on the *Empress of Scotland* from Montreal and will return on August 20 on the *Mauretania*. They have one month in Scotland, where he expects to enjoy considerable golf at Glen Eagles, and one month in Sweden and Denmark.

From Pasadena, Calif., Jim Reis writes: "Moved into a new house the first of the year and have had my hands full ever since with the landscaping, and so forth, as we had to start from scratch. Don't know where the time goes since I retired from Northrup a year and a half ago. One thing is sure, I haven't had any extra time on my hands. Would like to hear from any of the boys who get out this way. Went to M.I.T. dinner with Ken Sully '16 and Ed Regaled '41 and had a swell time."

Jim Strobridge is still president of Strobridge Company. Kim Stuart called him in April on his way through New York City to Genoa, Nev., where he is living since his retirement a few years ago from the Neenah Paper Company. Ralston Smyth was recently elected president of the New England Transit Club.

George and Mrs. Michelson were honored in a recent issue of the Jewish Advocate for their outstanding work in community affairs and were awarded the Advocate Rose and the Advocate Carnation. Mrs. Michelson was 1955 chairman of the Hebrew Teachers College, Women's Association scholarship dinner dance at the Hotel Statler, Boston, in March, given for the purpose of raising funds for contribution to the scholarship fund of the college and to Camp Yavneh, the Hebrew-speaking camp affiliated with the college. George is chairman of the social planning and budget committee of the Jewish Philanthropies, vice-president of the Hebrew Teachers College, president of the Associates of H. T. C. and a member of the building committee and the house committee. He has also taken an active part in the growth of Camp Yavneh. Mrs. Michelson is a member of the adult studies division of the Hebrew Teachers College, where she is acquiring a facility in conversational Hebrew in anticipation of another visit to Israel. She has been active for many years in community organizations including Combined Jewish Appeal, Associated Jewish Philanthropies, United Community Service, Bonds of Israel, Boston Red Cross, and others. George is an officer in Haifa Technion, the M.I.T. of Israel. Their three children are Nancy, a student in the high school division of the Hebrew Teachers

College and a freshman at Brookline High; Ruth Anne, who is with her husband, Dr. Donald J. Clotzer, stationed at the Marine Corps Base in Parris Island, S.C.; and Joseph, a senior at Trinity College in Hartford, Conn.

Max Untersee in Alhambra, Calif., says he is falling away to a ton but feels well. He finds himself lonesome for New England. He wishes we could get out an annual register. He would also like to know how George McCarten is coming. Doc Flynn is now in New York City as assistant manager of the Planning Department of the New Jersey Zinc Company. He has been with this company for 37 years and prior to coming to New York was manager of their Palmerton, Pa., plant. Had a nice letter from John Stevens, Jr., president of Marathon Corporation, Menasha, Wis., and your Secretary is looking forward to seeing him the next time he gets East. Your Secretary spent three days at the Midyear A.P.I. Refinery Division meetings in St. Louis in May and was happy to run into George Bond, who also attended these meetings. — EUGENE R. SMOLEY, Secretary, The Lummus Company, 385 Madison Avenue, New York City, N.Y.

• 1920 •

By the time you read this, the 35th Reunion will be history. The few regretful and nostalgic comments from those unable to attend will be of interest. Jack Logan wrote that he was still with Union Switch and Signal Company as section engineer, Mechanical Components Division. He says that unlike many of us who have grandchildren, he has a daughter who is a freshman at Carleton College and a son in Junior High School. He says that Carleton participates with M.I.T. but he doesn't expect his daughter to end up at the Institute. Jack's address is 17 Roxbury Road, Pittsburgh. Jim Wolfson recently visited the Institute to conduct a seminar on "Professional Problems Associated with Building Construction," for the course in Building Engineering and Construction. On this occasion Jim was able to have a visit with his son, Daniel, who is a senior at the Institute. Jim is with M. Shapiro and Sons Construction Company, New York City.

Roger McNear writes from Edinburgh to say that he would be at the Reunion in spirit if not in person. He is managing director of the North British Rubber Company, Ltd. Yu Yeh writes from Hong-kong to say that it would probably take him a year to get the necessary papers for a trip to the Reunion and that one of our classmates who is in Communist China might also have some difficulty in getting away. Yu, if you get to see these notes, I wish you would write and tell us the whereabouts of our old friend, Ki Chun. I have lost track of him. Others who will be in distant lands at Reunion time are K. B. White who will be back at his Paris office, Andre Deschamps who is in Brussels, and Perk Bugbee who is attending some Fire Prevention meetings in England and on the continent. We wish all members of the class a most pleasant and enjoyable vacation. — HAROLD BUGBEE, Secretary, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

Once more we come to that three-month pause, marking the end of one volume of The Review and signaling the resumption of these monthly chats with you in the November, 1955, issue which opens the next volume. We hope you have made your gift to the Amity Fund (plus another check to hasten completion of the Karl Taylor Compton Memorial Laboratories for Nuclear Science and Electronics) which includes your membership in the Alumni Association and assures continued receipt of The Review through the next nine issues. Meanwhile much has taken place which must of necessity be deferred until the fall because of the early date at which these notes have to be prepared. The nineteenth annual party of the Class of 1921 on Alumni Day, engineered by Ted Steffan and Chick Kurth, with assists from many others, is the most prominent item which is passing unrecorded until November. We hope you and yours enjoyed this yearly get-together and that you will join us again in coming years.

Mel Jenney's 35th Reunion Committee has met and set up the basic program for our seventh five-year celebration, to be held on June 8, 9 and 10, 1956, at the Sheldon House, Pine Orchard, Conn., ending on June 11 at Alumni Day in Cambridge with the usual annual gathering of the Class. Details of the reunion will also appear in The Review throughout succeeding issues. In the meantime, you will receive the initial letter from Mel sometime in October, along with your Secretary's quinquennial questionnaire for the Class records. A prompt reply at that time will be greatly appreciated as a big help towards the long term planning which must be made for an undertaking of these proportions.

A new activity on the Institute's ever changing front line of progress is the replacement of President Jim Killian's annual dinner on the eve of Alumni Day for the Educational Council, Class and Club officers, by a two-day Alumni Officers Conference at M.I.T. next September 9 and 10. Planned for Class Agents and Alumni Council members as well as for Honorary Secretaries, Educational Counselors, Class and Club officers, the group will live on campus at Baker House from Friday morning to Saturday afternoon for a vital series of introductions to the modern Technology and current top-level thinking and programming at the Institute. More than 50 members of the Class are actively serving M.I.T. in these capacities and are prospective attenders at the conference. A report of our part in the meetings must also await the November Review.

Robert F. Miller, Class photo-historian, has sent us another batch of colored slides, including pictures he made at last year's Class party together with a series of snapshots of Course VI-A men, copied from Dug Jackson's pictures. The latter were originally taken in 1921 by Dug, since the entire group was away from the Institute when our Class Day picture was made. Bob says that his son, Bob, who is taking a co-operative engineering course at Rochester Institute of Tech-

nology, was one of two students selected through a competitive examination to work part time in the General Motors plant in Rochester. Paul Rutherford will please note. Bob's inability to attend our June Class party was due to the graduation of his daughter, Betty, from high school. Your Secretary also missed the party, our first absence from a Class function, for a similar reason. Our daughter, Eleanor, was graduated from Glen Ridge High School and is headed for Boston, where she will take the course in physical therapy at Simmons College.

Leo Mann, President of Leo Mann and Company of Boston, says, in part, in his semi-occasional report for Class records: "For your statistics, I am still 26 as I have been for, lo, these many years and see no reason for re-editing. True, I can't seem to speed along as I did when I was first 26, but the rest of you are quite as spry as you ever thought you were. The girls seem to be getting prettier all the time and my eyesight is as good as always. No complaints!" Colonel Harold O. Bixby, who has been doing consulting engineering since his retirement from the Signal Corps after 25 years of service, announced last April that he had organized the H. O. Bixby Associates as consultants to the electronics industry. The new firm, with headquarters at 238 Main Street, Cambridge 42, Mass., makes surveys and analyses, plans and organizes promotions, serves as government liaison and handles professional personnel placement. Bix makes his home on the East Campus at 100 Memorial Drive. New addresses have been received from J. Morton Briggs, Robert S. Cook, William B. McGorum and William H. Rose. The Alumni Register advises that mail has been returned from the last known addresses of the following: Lawrence E. Harmon, Jr., John J. MacNeil, Rollin F. Officer, Lemuel Pope, Nicholas J. Rossi and Warren G. Waterman. If you know the current address of any of these classmates, will you please advise your Secretary promptly?

Herbert A. Kaufmann dropped in to see us and reported that Robert M. Felenthal has his own electrical manufacturing business in Westchester County, New York. Herb is vice-president of Treitel-Gratz Company, Inc., precision sheet metal fabricators of New York City. By the time these notes appear in print, we hope that J. Rowland Hotchkiss, President of the Palnut Company, will have completely recovered from a recent operation. Your Secretary gave a historical review of the M.I.T. Club of Northern New Jersey at its 20th anniversary banquet, at which he and George A. Chutter were among the former presidents who were special guests. Sumner Hayward heads the Club's local Educational Council and Joseph Wenick was re-elected treasurer. Mr. and Mrs. John C. Mahoney of Westfield, N.J., have announced the engagement of their daughter, Patricia Carroll, to William K. Flanagan, Jr., of Mendham, N.J. A graduate of St. Mary's Academy, North Plainfield, N.J., Miss Mahoney attended Georgian Court College and was graduated from the University of Virginia.

Fred W. Marlow, who heads the real

estate firm of Marlow and Company, is president of the Los Angeles Realty Board. A native of Pueblo, Colo., and an Army captain in World War I, Fred was graduated from West Point and received his bachelor's degree with us in Course I. The first director of the Federal Housing Administration in Los Angeles, he also served as personnel officer of the Civil Works Administration. He is well known for having accomplished the large development known as "Westchester." A past president and director of the Home Builders Institute, he is also a former regional vice-president of the National Association of Home Builders and an honorary life director of the California Real Estate Association. Recent additions to the host of 1921 men who are serving the Institute in various capacities, as detailed in the March class notes and listed in Class President Ray St. Laurent's recent letter to all members of the Class, are: George F. B. Owens, Colonel Holland L. Robb and Raymond A. St. Laurent. All are new appointees to the Educational Council, George for an area in Long Island, N.Y., Holland in La Crosse, Wis., and Saint in the Hartford, Conn., area.

Perhaps the most durable set of friendships in the Class are those which have always tightly bound together the men of Course VI-A. Men and women, rather, for the wives were cordially welcomed into this group at an early date, which has made it a charming as well as a charmed circle of staunch friends. Of recent years, the beautiful and talented daughters are lustrous additions to the frequent, unscheduled meetings of the Brotherhood of Hexaphas. When such a meeting takes place in the warm, hospitable Southern setting of stately *Shawnee Hall*, home of Madeline and Rufe Shaw on the banks of the Delaware in Beverly, N.J., the delight of those lucky enough to be invited, knows no bounds. Maxine and your Secretary (a "ringer" from Course VI) were the guests of Madeline and Rufe at a reunion in May, which also brought Paul and Mrs. Rutherford down from Rochester, N.Y., Dug and Mrs. Jackson up from Aberdeen, Md., George Chutter, Royal Wood, Ralph Gilbert '19 and Mrs. Gilbert from way East in Connecticut and Gotham, Larry and Mrs. Buckner from out West in York, Pa., Allan Kidder '23, Mrs. Kidder and daughter, Joyce, from just over yonder in Philadelphia. In the pleasant spring Sunday afternoon, the guests enjoyed a sumptuous repast and entertainment, including Madeline's concert on the electric organ and Rufe's unusual color movies of a recent trip to Hawaii (where he missed seeing Harry Field) and the South Sea islands. Buck had 1924 movies of the cadet group at Public Service, Newark, including Phil Coffin, M. D. Hooven and Hollis Sels. There were the 1921 pictures, collected by Dug, of all except two of the original group of 27 men who made history by constituting the first Course VI-A class at M.I.T. and the first cooperative course of its kind in the entire country. Bill Timbie, mentor of the group and now professor emeritus, was not forgotten. A letter of invitation was sent by Rufe, asking Bill once again to be our regular guest

at next year's 35th reunion of the Class at Pine Orchard. Your Secretary would like to propose that Bill be officially elected a member of the Class of 1921 at that time. It was a happy group that reluctantly took leave of Shawnee Hall to retrace the return from paradise to the workaday world, but not before a certain well-known wit was heard to sigh that work is the curse of the drinking class! Our sincere thanks go to Madeline, Rufe and VI-A.

It is with profound sorrow that we record the passing of three members of the Class and extend sincerest sympathy to their families.

Elmer Lawrence Wesley Barry died in December, 1950. A native of Holliston, Mass., he entered Technology with the Class of 1920 and was associated with us in Courses II and XV. During World War I, he was a chief quartermaster in the U.S. Naval Reserve Force, Aviation. He is survived by Mrs. Barry of Redlands, Calif.

Ernest Farnham Stockwell died in Cambridge on March 11, 1955. A native of West Somerville, Mass., he prepared for Technology at Phillips Andover and was associated with us and the class of 1922 in Course XV. He started in his father's factory, the Barbour Stockwell Company of Cambridge, as an apprentice machinist and rose to become president of the company in 1933. He was a director of the American Mutual Liability Insurance Company, treasurer of the New England Transit Club and the Boston branch of the National Metal Trades Association and a member of the executive committee of the Associated Industries of Massachusetts. He is survived by his wife, Beatrice B. Stockwell; four sons, Ernest, Jr., Sherwood B., M.I.T. '49, John F., and James I. Stockwell; a brother, Howard A. Stockwell of Westford, Maine; and two sisters, Miss Bertha A. Stockwell of Cambridge and Mrs. Madeline S. Chick of Winchester, Mass.

Professor Walter Maxwell Fife died on April 22, 1955. President James R. Killian, Jr., wrote: "I regret to announce the death on Friday evening, April 22, of Professor Walter M. Fife, who for 33 years served on the Faculty of the Department of Civil and Sanitary Engineering. He was 64 years old. Professor Fife was born in Peterboro, Ontario, Canada, and attended the Peterboro Collegiate Institute and the University of Alberta, where in 1913 he received the degree of bachelor of science. M.I.T. awarded him the degree of master of science. Prior to his teaching career, Professor Fife was employed as an instrument man for the Dominion Land Surveys and as detailer for the Dominion Bridge Company in Winnipeg. From 1913 to 1922, apart from three years' service as lieutenant in the Canadian Expeditionary Force, he was an instructor and then assistant professor at the University of Alberta. After completing his graduate studies at M.I.T., Professor Fife joined the Faculty as assistant professor of civil engineering. He was promoted to associate professor in 1928 and in 1941 was named associate professor of structural engineering.

"Professor Fife served as exchange professor at Stevens Institute of Technology

during 1934-1935 and, in 1935, became a naturalized United States citizen. During World War II, he worked half time on special war research. He was an associate in the Engineering Institute of Canada and the American Society of Civil Engineers, a member of the Boston Society of Civil Engineers and the American Concrete Institute. He is survived by his wife, the former Vera May, and by two sons, James A. and Walter M. W. Fife."

Ray St. Laurent, Chick Kurth, Ed Farand, Bob Miller, Ted Steffian, Warrie Norton, Mel Jenney and Mich Bawden join your Secretary in wishing you and yours a very pleasant summer. — CAROLE A. CLARKE, *Secretary*, Federal Telephone and Radio Company, 100 Kingsland Road, Clifton, N.J.

• 1922 •

By the time you read these notes, our Secretary, C. Yardley Chittick, will have returned from his business and vacation trip abroad with full report and you will have missed an outstanding Alumni Day, if you didn't attend. Please put Alumni Day on your calendar as a must for next year.

Our notes compliment Edward Lindley Bowles, consulting professor at the School of Industrial Management M.I.T., for receiving honors from Washington University, St. Louis, "in recognition of outstanding achievements and services which have reflected honor upon the University." Ed, who lives in Wellesley Hills, received his S.M. from M.I.T. and D.S.C. from Norwich University. He has made many scientific contributions worthy of note. It has been nice to read of Edward A. Merrill of Skidmore, Owings, and Merrill, receiving a gold medal from the American Institute of Architects for their design of the 5th Avenue branch of the Manufacturers Trust Company, New York City.

We are sorry to report the death of Edwin J. Allen, John Hancock Mutual Life Insurance Company, 225 Broadway, New York City, and Harold A. Bull late of Republic Aviation. — C. YARDLEY CHITTRICK, *Secretary*, 41 Tremont Street, Boston, Mass. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Ellicott Street, Buffalo 3, N.Y.

• 1923 •

Our own Dean of Humanities and Social Studies, John Ely Burchard, IV, in an article on, "The Arts Survive Technology," in the New York *Herald-Tribune*, April 17, commented, "The thing to worry about is that high salaries offered for even bad scientists and technicians will persuade good artists, historians and philosophers to desert the arts and grow rich." Both John and Provost Julius A. Stratton, VI, were quoted in the article, "How to Humanize a Scientist," that appeared in the *Saturday Evening Post*, April 23. Nice work, fellows! We all are cheering for you.

Details of the death of Brigadier General John Will Coffey, II, killed in an airplane crash in Germany on March 8, 1951, have been received through the courtesy of Brigadier General Harris Jones, I, Dean of the Academic Board at the United States Military Academy, West Point, New York. A resolution of the Academic

Board reads in part as follows: "In the death of Brigadier General John W. Coffey, Professor of Ordnance, the Academic Board of the United States Military Academy has lost a faithful colleague and friend. BE IT RESOLVED, That we attest to the inspiration and co-operation which General Coffey brought to the deliberations of the Academic Board, and to the valuable services he rendered to West Point and to the United States Army." He is survived by his wife, a son and two daughters. To them we send our deepest sympathy — late though it may be.

Presumably, all of you received a copy of President Jack Zimmerman's letter of April 15, regarding our contributions to the memorial for Dr. Compton. Because he was a great philosopher as well as a great scientist, there is nothing finer that we could do than to help perpetuate his memory and his ideals. A generous contribution will not only back him up, but will help to advance the philosophies that John Burchard so ably expounds. Jack Zimmerman has had two letters from Colonel Walter E. Richards, USAF (Ret.), IX, who was in the hospital for a serious operation but is now out and on the road to recovery. Congratulations! The *Standard Times* of New Bedford, Mass., carried an article on March 15, describing a new method of preserving milk discovered by Professor Milton E. Parker, VII, Director of Food Technology at the Illinois Institute of Technology in Chicago. With new methods, bacteria were destroyed by mercury-in-gas resonance radiation, all without effecting the delicate taste characteristics or nutritional properties. Hope you all will have pleasant vacations this summer! Then — send in the stories for these notes. — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 North Broadway, White Plains, N.Y. WENTWORTH T. HOWLAND, *Assistant Secretary*, 1771 Washington Street, Auburndale 66, Mass.

• 1924 •

Summer is upon us. Actually, as these lines are written it's only getting close, but the weather today could well be end-of-June, so the feeling is there at least. In early May a little group of us got together at the M.I.T. Faculty Club to write stirring letters to those recalcitrants who had not yet responded to this year's Alumni Fund. Unexpected and very welcome additions to the gathering were Frank O'Neil and Dent Massey. George Parker just happened to bump into Frank in the Sloan Building and roped him in. Dent Massey appeared in your Secretary's office that afternoon laden down with oversize suit cases full of reports, data, descriptive material and a come-apart model of a nuclear reactor. He's trying to corner M.I.T.'s reactor business. Very impressive display. Incidentally, in going through the addresses for our Class Directory, a considerable number of nuclear and atomic businesses showed up. Looks as though '24 is keeping abreast of the times.

Expected by now to be able to give you a first-hand report from the docks of Kow Loon. Jimmie Wong wrote that his oldest son is second engineer on a round-the-world ship which would dock in Bos-

ton this spring and asked your Secretary to show him around the Institute. Unfortunately the ship had engine trouble and had to cancel Boston out as a port of call. Probably get a visit from Chief Engineer Simonds before long. He's about due again.

Dr. Avery A. Ashdown is to be hung in the Institute's Graduate House. Ave, who is Associate Professor of Organic Chemistry, has been Faculty Resident at Graduate House (Riverbank Court, to you) for some 22 years. Now the boys have gotten together to have him done in oil. Gardner Cox, the artist, will add Dr. Ashdown's name to a distinguished list of sitters including General Marshall, Judge Learned Hand, Dean Acheson and, above all, Doc Lewis.

On June 18 G. Raymond Lehrer gave his daughter's hand in marriage. Elizabeth Ann had graduated from Cornell just five days before. The groom was G. Jarvis Lyons of Toronto, where they will make their home. Mike Amezaga is now a grandfather. On March 1 a baby girl was born to his daughter.

Couple of honors to report. "Edward J. Hanley, President of Allegheny Ludlum Steel Corporation, was elected president of the Western Pennsylvania Safety Council." This happened in January, just about the time Ed was becoming a theatrical angel. Maybe he figured this safety business would counteract his flier on Broadway. And in May, Dr. Hudson Hoagland, Executive Director of the Worcester Foundation for Experimental Biology, was elected a Vice-president of the American Academy of Arts and Sciences. The President, by the way, who was re-elected, is John Ely Burchard '23, M.I.T. Dean of Humanities.

Maybe this will cheer up those of you who are feeling your years. A news story about Bump Brown says, "Elbert C. Brown, Assistant to the President of the Hartford Electric Light Company, is among New England's young executives." Maybe we should propose the names of Ed Hanley or Jimmy Doolittle to the Junior Chamber of Commerce as "young man most likely to succeed?" Another young utility executive is Anthony D. Matarese. Vice-president and General Manager of the Brockton-Taunton (Mass.) Gas Company since 1948, last April he was upped to president. One last one, Vincent E. Lysaght has been named General Sales Manager of the American Chain and Cable Company. Vin was formerly manager of one of the company's divisions.

Guess this is about it for now. A bit of a pause before any more of these notes. Your Secretary hopes you will keep him on your mailing list during the months ahead so that when fall comes he will be able to regale you with the summer peregrinations and the changed fortunes of your classmates. Here's the address — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

Several of our classmates have had their names in the news during the past several months. Edward R. Harris, X, has been elected vice-president of the Mead Board Sales, Inc., Cincinnati. Ed has been

with Mead since his graduation in 1925 and in addition to direct management of the Lynchburg sales office, he will supervise both the development and sales of board specialties. Alex Brown, X, chief engineer for Emery Industries is chairman of the Technical and Scientific Societies Council of Cincinnati, Ohio. This council was established in 1935 for the purpose of furthering the common aims and co-ordinating the activities of the organized technical and scientific groups in the Cincinnati area and endeavors to maintain high professional standards in the respective fields of the Engineering Society of Cincinnati and 23 local sections of national societies. The responsibility of chairmanning this council should come easily to Alex since he has served as past chairman of the American Institute of Chemical Engineers and is actively engaged in the American Technical Society and the Engineering Society of Cincinnati.

Another newspaper clipping indicates that Don Taber, XV, recently assumed further responsibilities, having been elected a director of the Hadley Falls Trust Company, Hadley Falls, Mass. Many of you will be interested to know that Don is treasurer and general manager of the American Pad and Paper Company of Holyoke and is also vice-president of the People's Savings Bank in that city. He is quite active in community affairs, being president of the Community Chest, a director of the Holyoke Hospital, a trustee of the Public Library, a director of the Massachusetts Community Organization Services, a deacon of the First Congregational Church, as well as holding the highly important post as moderator of the Hampden County Association of Congregational Churches and Ministers. He is also a member of the Canoe Club and the Lions Club of which he is a past president.

News of the passing of four of our classmates has come in during the past six months. Preston M. Putnam, I, died sometime during the past six months. As yet, no specific information has come in. The last address in the class files indicated he was located at Niagara Falls, N.Y. Charles P. Boyd, XIII, of Nashua, N.H., died on April 21, 1955, and Bob Learoyd, XV, whose most recent address was Raleigh, N.C., died on April 13, 1955. The Secretary has no particulars in any of these cases. Frederick M. Rice, I, passed away on May 7 at the Leonard Morse Hospital in Natick, Mass. Fred was well known to many of you, having been a most loyal Alumnus and quite active at class meetings and reunions. He is going to be greatly missed in the activities of our Class. He had suffered a heart attack several weeks before his death and it was a great shock to those in the Boston area to read in the papers that he had passed on. Fred had been a civil engineer with the Army Engineering Corps for 20 years. He was a native of New Rochelle, N.Y., but had spent most of his life at Natick, graduating from Natick High School in 1921, from the Institute in 1925 and the Harvard Graduate School in 1929. He also received a master's degree from M.I.T. in 1932. He was director of the Natick Five Cent Savings Bank, a deacon of the First Congregational Church and

secretary and trustee of the Dell Park Cemetery Association. Fred is survived by his wife, Ruth and two sisters. — F. L. FOSTER, *Secretary, Room 5-105 M.I.T., Cambridge, Mass.*

• 1926 •

With a real fat envelope of newspaper clippings about 1926 men it looked as though this issue was to be full of news but after looking over the clippings, most of them evaporated into thin air. Many were repeats still coming in on items already reported. One clipping though from a New Orleans paper, however, contained a story about classmate Horacio Garcia-Capurro of Montevideo. Horacio, a consulting engineer, attended the Inter-American Investment Conference at New Orleans with the president of the Montevideo Stock Exchange. Horacio's statements about U.S. investments in Latin America hit the headlines when he suggested that U.S. income tax on profits made in Latin America be eliminated in order to stimulate investment there. Another item that came via news release tells of the appointment of Dudley Parsons as a regional vice-president (northeast) of the Public Relations Society of America.

The sole letter received during the month came not from a '26 man but from a member of the class of '08 who had been peering through our notes, Mr. Percy Handy. The frequent references to Rockport in our notes caused Mr. Handy to wonder if an old engineering buddy of his still lives at Rockport and we were pleased to report that he does. Mr. Handy explained his reason for reading our notes was that his son-in-law is Leon F. Aitzevsky, our classmate. However, no reason is necessary, we have lots of members of other classes (and more particularly their wives) who tell us that they read the '26 notes. While we cannot figure why they do it, we are pleased and flattered to have them aboard.

This month's notes are, of course, being written from Pigeon Cove, as usual, but their center of gravity is Detroit, where the Rubber Division of American Chemical Society recently met. We always find Detroit an interesting place to visit, especially if one is interested in automobiles. An assembly line is always fascinating and this time the Ford line at the Rouge provided a puzzler when now and then a chassis came along minus a rear bumper. Did someone forget? Impossible. The solution came with the bodies that tumbled down from the floor above when a "Thunderbird" body with rear bumper dropped upon the questioned frame. The highlight of our visit, however, was a luncheon with Gordon Spear who came in from his home at Walled Lake, Mich., where for five weeks, he had been recuperating from an operation. Looking fiddle-fit, Gordon was about to return to his work at Fisher Body. We extracted a promise from him that we will see him in New England this summer — and incidentally, we hope that any other twenty-sixers who are in the east during the summer will drop by Rockport.

We had learned from Gordon that

Dave Sutter was coming to Cambridge for the dedication of the Kresge Auditorium and Chapel and arrangements were made with Dave for his visit while we were in Detroit and consequently, we had seats together. Dave, together with Bill Bagley '35, was responsible for calling the need for an auditorium and chapel at M.I.T. to the attention of the Kresge Foundation in Detroit. Without the loyal efforts of these two Alumni, this important milestone in the history of M.I.T. might never have been reached. You will read on other pages of *The Review* (probably in the June issue) a complete story of the dedication of these buildings, so we will not repeat it here. However, a few personal reactions are often helpful in grasping an idea which is quite far from the conventional as the photographs of these buildings indicate. Jim Killian was the M.C. for the ceremonies which of course took place in the auditorium and his opening remarks brought out that the daring design of these buildings typified the acceptance of M.I.T.'s responsibility to lead.

It would have been the easy way to put up a conventional building and certainly it would not have evoked the comment that has accompanied this construction, even though much of this comment was not intended to contain a barb. For example, when telling a friend about the new construction, it has always been easiest to describe the auditorium as the building that looks like a half grapefruit in back of the "Coop." Actually, however, that does not describe it — it merely locates it. To me the building is a giant igloo with truncated slices around its base to remove the space that would not be usable. What motivated the architect, one can only guess, but I presume he was trying to make a building to fit a need and when seated in the auditorium, it is pretty conclusive that he has been extremely successful. I went into the building with an open mind and came out concluding that it was the finest auditorium in which I had ever sat. In spite of its capacity of 1,200, every seat seems to be down front. Its circular shape insures that opposite ends of each row are as close to the center of the stage as the middle of the row. The terraced seating would permit the man in front to wear a tall silk hat without annoyance and the completely unsupported dome gives a feeling of being out of doors. Tremendous thought has been given to providing everything an audience might need for its comfort plus countless details that contribute quietly and unseen to this comfort. Similarly the facilities for speakers and performers in the auditorium and the theater below represent the ultimate in forward thinking. You must plan to see this fabulous new building.

The chapel is as unique as the auditorium but very different. It causes one to feel grave which must indicate that the architect has succeeded with his design. It does not remind you of any church you have ever entered — if it did it would not fit the requirement of serving any faith that any boy at M.I.T. from any part of the world may have. The building will be as unfamiliar to him as it was to me, I am sure. But he too will

feel its severity. I am looking forward to attending a service in the chapel. I am sure it will be a memorable experience.

Gentlemen of twenty-six, and ladies too of course, this is the final issue before summer. However, don't be surprised to receive some kind of missile from your Secretary before the class notes reappear in the fall. The missile will no doubt include a space for you to write us a word or two about your affairs and interests. We do hope that each of you and your families have a pleasant and exciting summer and don't forget to drop by when you come to New England. — **GEORGE WARREN SMITH, Secretary, c/o E. I. duPont de Nemours and Company, Inc., 140 Federal Street, Room 325, Boston, Mass.**

• 1928 •

Dick Titherington sent in a brief but very welcome note with a complimentary comment on our December Class Notes. Thanks, Dick, but it is the thoughtful classmates like you who provide news that make the notes possible. You are the ones to be commended. Dick writes "that guy Batchelder was seen in Boston early in March but all he does is catch planes for somewhere else. No stability. But lots of pep!" Of himself, Dick has only this to say, "I'm an old stick-in-the-mud, 23 years in the State Highway Laboratory and twenty-fifth wedding anniversary on April 24." We happen to know that Dick is one busy man with an outside law practice, activity as an Officer in the Naval Reserve, and an instructor in electronics at the Naval Reserve Base in Hingham. Our congratulations to you, Dick and Katharine, and our very best wishes for your next 25 years!

Ben Miller (Dr. Benjamin F. Miller) is another of our illustrious classmates who has made a name for himself in the medical world. After graduating as a chemical engineer in 1928, Ben entered Harvard Medical School. He emerged as an M.D. and has been doing important research in medicine ever since. At present he is medical director of the May Institute for Medical Research, Cincinnati, Ohio. Ben has written much on medical subjects. This includes a collection of biographies written by doctors and incorporated into a book entitled, *When Doctors Are Patients*.

Until late fall of 1954, Ben was associated with Peter Bent Brigham Hospital where he specialized in kidney ailments and was responsible for setting up a famous kidney transplanting operation. Two years ago Ben wrote a very interesting article for *Collier's* (April 25, 1953) which we have only just read. (Jim Donovan sent it in.) This was on the subject of transplanting human body parts. We recommend that you dig out this item and read it if you have not seen it already. In addition to being a fine medical man, we are convinced that Ben is still very much an engineer. We'll meet again in the pages of the November issue of the Review. Until then, a pleasant summer to all. — **GEORGE I. CHATFIELD, Secretary, 49 Eton Road, Larchmont, N.Y. WALTER J. SMITH, Assistant Secretary, 15 Acorn Park, Cambridge, Mass.**

• 1930 •

During preparations for our Twenty-Five Year Reunion held last month at Baker House, a number of interesting news items came to light. Willard Paine's daughter graduated from the University of Colorado in June. Dick Wilson's son Stewart will enter M.I.T. as a freshman in September. Ralph Peters' son and namesake graduated from Amherst in 1954, has been a graduate student at M.I.T. in chemical engineering this past academic year, and will be married on July 23 to Jane Estey of Norwood, Mass. George Perry has two married children. The Morell Mareans recently purchased an ocean front estate on Marblehead Neck which was the scene of our Reunion clambake on June 12. Eric Pawley has been research secretary of The American Institute of Architects for the last five years with headquarters in Washington, D.C.

Tom DeMarco has been promoted to the management of the industrial applications department of Monsanto Chemical's plastic division. The DeMarcos have three children and live in Wilbraham, Mass. In September Dr. Walter Soroka of the University of California will deliver a paper on, "Analogue Models in Applied Mechanics," at an international engineering conference in Venice, Italy. There are two Soroka children. John Cleary of St. Louis has five children. His 10-year-old daughter has been a professional trapeze performer for five years. Bob Clyne is now located in New York City with U. S. Industries. Formerly he was in their Chicago office. Fred Markham of Provo, Utah, is president of the National Council of Architectural Registration Boards.

Sympathy is extended to the family of our classmate, Brigadier General George F. Schulgen, of Suttons Bay, Mich., who passed away in February, 1955. The Alumni Office has had mail returned from six members of our Class and would appreciate learning their present whereabouts: Lingurn H. Burkhead, John G. Cecil, Richard I. Glass, Norman J. Smith, Daniel T. Walker, and Leonard Wechsler.

This issue of The Review marks the end of 20 years' service by your Secretary as a class officer. To all of you who have written us letters and to the assistant secretaries who have contributed news items over this period, we are especially grateful. Please lend a helping hand to our successors, who are taking over this summer. They will give you a report of the Reunion in the November issue. The Alumni Fund warrants your continued support, which will be appreciated by everyone at the Institute in general and by your class agent in particular. — **PARKER H. STARRATT, Secretary, 1 Bradley Park Drive, Hingham, Mass. Assistant Secretaries: ROBERT M. NELSON, 48 E. Lawrence Road, Phoenix, Ariz. ROBERT A. POISSON, 150 E. 73rd Street, New York 21, N.Y.**

• 1932 •

We have had word from Mal Davis. He is with Shell Oil Company as an exploitation engineer, working on the thermal

recovery of oil and the indoctrination of new Shell trainees. Mal married shortly after leaving Tech and has one daughter at the University of Texas, another daughter just finishing high school and a son, Dick, entering high school. The Davises live at 3754 Robinhood, Houston 5, Texas. Stu Fleming writes that he is temporarily in Portland, Ore., for six months, doing some engineering work for Ford, Bacon and Davis on the Bonneville Power project. He still wants to be written at home. Charlie Chapman has sent me his amateur radio license call — W4SVB. Probably anyone who is in amateur radio knows this anyway. He is still chief metallurgist for Virginia Carolina Chemical Corporation, Nichols, Fla.

Stu Miller is Pittsburgh area engineer for the Factory Mutual Engineering Division. He has been with Factory Mutual since 1937, with the exception of three years in the Army. Jake Millman has just finished his second textbook, *Pulse Circuits and Techniques*. He is still at Columbia, professor of Electrical Engineering, and reports spending half his time on government sponsored research. Nick Rothenthaler has been made assistant manager of the Blast Furnace and Coke Ovens, Steel Division, Ford Motor Company, which gives Nick experience in practically all aspects of the Ford steel operation. Nick has done quite a job for the Episcopal Diocese in pioneering some new programming work for the establishment of missions. He is currently serving in the Department of Finance on the Executive Council. His twin daughters leave this summer for Norway as goodwill ambassadors for the American Field Service on an interesting scholarship.

Norm Schulze is plant engineer with Sprague Electric in North Adams. He too is interested in ham radio and photography; also with all the activities concerned with a family of three children. Most of you probably have seen Tom Sears' report of April 15. For those who didn't, Tom advises that for the past several years the 25th Reunion classes have used the new Baker House at the Institute for their headquarters. Apparently there has been nothing but enthusiasm for this and we are starting to make our plans for our Reunion there. Rolf Eliassen is Chairman. — **ROBERT B. SIMPLE, Secretary, Box 111, Wyandotte, Mich. Assistant Secretaries: WILLIAM H. BARKER, 45 Meredith Drive, Cranston, R.I. ROLF ELIASSEN, Room 1-138, M.I.T., Cambridge 39, Mass.**

• 1933 •

A double-barreled dose of news this month comes from Beau Whitton, XVII, who did your Secretaries a good turn with an interesting bit of reporting on Walt Duncan, XV, and himself. He forwarded a sheaf of clippings from the Durham, N.C., papers telling of Walt's doings as national president of the National Institute of Dry Cleaning. He spoke at the annual meeting of the North Carolina Association of Cleaners and Launderers. From Beau we learned that Walt's daughter is a freshman at Wellesley this year; his older son enters college this fall and another son will be ready for college in a few years. Beau reports that he has been

in the midst of an executive training program at the University of North Carolina (the oldest state university in the U.S.A., says Beau with pride!). All this added to a full time job running a thriving construction business does not make for relaxing weekends.

Prominent on speaking platforms among our classmates are Ivan Getting, VIII, and Muriel Bliss Wilbur, Public Health. Ivan, a vice-president at Raytheon, spoke at the Los Angeles mid-winter meeting of the Electronic Components Conference on the rapidly growing importance of components in overall electronics systems planning. And Muriel, who lectures at Simmons College and serves on a number of medical and health association boards, was the principal speaker at recent graduation exercises for a class of nurses at an Attleboro hospital. Our Class lost one member by death in the spring: Vernon Gattenby, X, who suffered a coronary. We extend our sympathy to his daughter, who survives him in Lawrence. Harris A. Thompson, VI-A, makes news on the editorial front through his recent publication of *Alternating Current and Transient Circuit Analysis*. Harris is an associate professor of Electrical Engineering at the University of Colorado. In the "On the Move" department this month, we note that Ben Mesick, II, has joined the technical staff at A. D. Little here in Cambridge to oversee and expand the company's activities in titanium fabrication. Ben has been a commanding officer at Watertown Arsenal and had served in the Army for many years before joining A. D. Little. Colonel George E. Hughes, VI-C, has recently moved to Fort Sill, Okla., from the Springfield (Mass.) Ordnance District where he was deputy chief. And by no means least, from the "we are grateful for the news" division, a personal report from Mal Mayer, IX, who visited Cambridge in early May. Mal is vice-president and treasurer of the Schwarz Laboratories in New Rochelle. Mal's family numbers three in the junior department; daughters who are 14 and 9, and a son 12. Sorry we missed Adam Sysko, X, who stopped in while in Cambridge but had to leave before we could get together for a chat. All of which leads to the suggestion that each of you who reads this column is cordially invited to stop in.—**GEORGE HENNING, Secretary, 330 Belmont Avenue, Brooklyn 7, N.Y. R. M. KIMBALL, Assistant Secretary, Room 3-234, M.I.T., Cambridge, Mass.**

• 1934 •

Jink Callan reports having met George Fowles at a packaging show held in Chicago in April. George is in sales of plastics for B. F. Goodrich. After M.I.T. while with Anaconda, he was responsible for the extrusion of the first vinyl insulated wire. After five years with Jackson and Moreland from 1937 to 1942, he joined the B. F. Goodrich Chemical Company in Cleveland and he became sales manager of this organization in 1945. He lives in nearby Solon, Ohio, and has two daughters, 14 and 15. Arthur Miller, Chief Electrical Engineer of the Sanborn Company in Cambridge, gave a paper at the New England Radio-Electronics

Meeting held in Boston on April 29. His talk was titled "The Design of an Electronic AC Wattmeter and RMS Voltmeter." Hank Backenstoss' letter to the Class dated April 15 will long since have been in your hands. This drew a reply from Oleg J. Devorn who asks for news of architectural classmates. Oleg says that he has been with the California State Division of Architecture for over seven years and lives at 1120 N Street, Sacramento. Another of our architects, George Reid Jordan, has been in Trinidad since last winter for the Foreign Operations Administration as Construction Engineer and Housing Adviser. His job is to advise local government and housing officials on improved low cost housing. George had previously managed a housing project in Newport, Va.

Richard Gouchoe of Rutland, Vt., is now superintendent of a newly organized power control department for Central Vermont Public Service Corporation. This department will include sections on system dispatching, relay and radio engineering and maintenance, and hydraulic engineering. Dick has been with Central Vermont Public Service since leaving school except for a wartime period in the Navy. He and his wife have three daughters ranging from six to ten. George Merryweather was last winter elected chairman of the board and secretary of the Merryweather Machinery Corporation of Cleveland. George is active in machine tool circles.

A belated and this time tragic item of news dating back to last January. This is the accidental death of Franklin Lobdell in Darien, Conn. His body was found at his home, his death having been caused by loss of blood from a head wound, the cause of which was not stated in the news account at hand.

Carl Von Ende has been appointed manager of the Cascade Mill, paper manufacturing division of Brown Company, Berlin, N.H. This company manufactures northern kraft specialty papers. Previously, Carl had been with Gilman Paper Company in Gilman, Vt., for eight years, lastly as manager of manufacturing. He received his master's degree with the Class.—**WALTER MCKAY, Secretary, Room 33-213, M.I.T., Cambridge, Mass.**

• 1936 •

In response to a call of Tony Hittl, Reunion Chairman, a "hard core" of Reunion Committeemen met at the Rainbow Room, 65th floor, R.C.A. Building, Wednesday noon, May 4, 1955.

Eleven members attended: Tony Hittl, Mal Graves, Hank Lippitt, Al Gray, Py Williams, Mal Holcombe, Joe Burns, Jim Leary, Eli Grossman, Jim Patterson, and Jim Craig.

The time for the Reunion was tentatively set at Friday-Sunday, June 8, 9, 10, 1956, the weekend prior to Alumni Day and Alumni Week at Tech. This would permit a mass movement of at least part of the group to Cambridge Sunday evening or Monday morning.

There was some discussion about the Weekapaug Inn, Weekapaug, R.I., as being one of the best possible reunion sites. Those of the group who had been there in 1951 enthusiastically endorsed the

idea saying that the location, near the beach, was ideal, the people (not only there but those who came) were pleasant, and the food excellent. Recollections were that there would be room for 125 or so, which would cover more than even about 100 that turned up in 1951.

As a result of the meeting there is a certain amount of news of various members of the Class. Two of the members, Joe Burns and Jim Leary, are working for the Abbot, Merkt and Company as industrial and consulting engineers in New York. Joe, a married man since 1941 with two girls, Mary Lou, 13, and Kathryn, 11, is now looking for a home in Greenwich, Conn., after being an apartment dweller there for a year. Jim Leary is carrying on from his new home at Belle Haven near Greenwich, Conn., with his wife Ann and daughter Pamela, 12. As Jim says, "everything has been going fine, except the spring weather resulted in Ann's doing some planting. She found that the water faucet was dry and decided to turn some valves. To make a long story short, she turned the valve controlling the fuel oil. Results — no heat for three days — plumbers working for three days (without any results). New oil pump and so forth. Threats that the tank would have to be checked and half the lower level slab removed. It all turned out well when a layman asked the question, 'Did anyone check the valve?'"

Tony Hittl, Jim Craig and Jim Patterson are all at Linde Air Products Company in Manhattan. Tony, a married man since 1939, has a son Tony, nine, and a daughter Barbara, six. For the last several months he has been working on special projects for the company installing a large volume oxygen plant in California for industrial oxygen. Jim Craig, now an eastern region engineer for Linde, was transferred from Boston to New York City. Previous to his transfer, he was manager of Linde's engineering service for the New England area. Jim has been a member of the American Welding Society for some time and has written technical papers for the Society and presented a number of his ideas at society meetings. As if that were not enough, he has been in scout work for the Boy Scouts of America and was recently appointed chairman of the Taconic District, probably to keep his sons, Richard Thomas, 16, and Robert Montgomery, 14, in line so that they will not bully sister Susan Eleanor, 10. As Jim says, the most interesting thing he has been doing in recent months besides sending in his expense accounts, is working on problems involving the use of rare gases, such as argon in connection with titanium welding. The use of furnace argon in blanketing melts is a new technique which has developed from his work in vacuum metallurgy. Besides this, some of his ideas for tungsten carbide coatings for use in the jet piercing of granite (the same as for open pit taconite) has produced results showing six to ten times the speed of cutting as compared to conventional tools.

Jim Patterson, who has also just been transferred to New York together with his wife, Marian, and daughters Marcia Ann, 13, and Kathleen Louise, 10, reports that this recent transfer from Chi-

cago to New York, as assistant general superintendent, is the last in a series of moves which have taken Jim from New York to Buffalo, Dallas, San Francisco and back to New York in the last 10 years. He says, however, the last exciting event which occurred to him was a short time ago when he was almost run over by his own car!

Mal Graves, on the staff of the vice-president for Engineering of American Machine and Foundry Company in New York, reports that he is enjoying life as a country squire in Stamford, Conn., along with his wife, Florence, daughter, Sharon, seven, son, Robert, six, and daughter, Paula, three. During the war, 1941-1945, he served a stint in Army anti-aircraft in the South Pacific and the Aleutians. His only comment is that he recently attended his twenty-fifth high school class reunion and was surprised to find that his erstwhile classmates had all aged much more rapidly than he! Al Gray at Gibbs and Cox, Inc., in New York, is carrying on his work in the Hull Scientific Section. In spite of this, however, he has managed to find time to rehearse with the Glen Ridge Players, Glen Ridge, N.J., his latest histrionic abilities being devoted to the part of Larrabee in "Sabrina Fair." What time this leaves him for his family, Pamela Jane, 14, John Sherman, 12, and Penelope Susan, six, Al does not say. Marshall Holcombe, in his new position on the management committee as General Patent Counsel for Aircraft-Marine Products, Inc., comments about his problems in trying to determine the scope of anti-trust laws insofar as they affect foreign subsidiaries and determining the impact of the discriminatory pricing provisions of the Robinson-Patman Act on the sale of electric components that Aircraft-Marine sells to I.B.M. Remington Rand and as subassemblies for business machines, airplanes and washing machines generally.

Eli Grossman, who is now vice-president-actuary, for the Union Labor Life Insurance Company of New York, reports that he is author, no less, of "Actuarial Note on Duhamel's Integral" in an English Actuarial Journal, 1954, and co-author of "Accident Rates with Confidence Limits" in Proceedings of Casualty Actuarial Society. Eli and wife Vivian attended the International Congress of Actuaries in Madrid, June 1954. In pursuance of his expertise in tennis he just missed seeing Tony Trabert and Vic Seixas playing in Barcelona that same summer. Py Williams reports from the Robertson Paper Box Company in Montville, Conn., where he is plant engineer, that he is now chairman of Montville Board of Finance and president of Montville Parent-Teachers Association, probably to supervise his children: Elizabeth 12, Nancy 11, Ellen 9, and Jack Pyam 7. For recreation he is now designing portable bath houses for hurricane areas, such as Connecticut, made of plywood and corrugated allsite, a colored plastic which not only makes a small serviceable bath house, but which adds a gay color scheme as well.

Dorie Shainin reports in his letter that seeing the class notes in the April Review stirred him into sending us a check for

the class treasury and a short summary of his recent activities: After 16 years with the United Aircraft Corporation, he "retired," becoming an industrial consultant with Rath and Strong, Inc., Boston, although he is still living in Manchester, Conn., since "work" is in plants around the country. The quotation marks are used to denote that he is enjoying every minute of it, doing exactly what he most wanted to do — grappling with knotty problems in production, sales, and management, helping managers solve them by drawing freely upon methods of Operations Research and Statistical Engineering, and teaching such people the necessary fundamentals so they can continue to be more effective with their problem solving. He has been working intimately in textiles, printing, paper manufacture, ordnance gage manufacture, machine tools, aircraft accessories, silverware, and clocks. This work has led to lecturing before technical societies, at several universities, and participating in the American Statistical Association, Operations Research Society of America, and the American Society for Quality Control, at present being vice-president of this latter group of 9,000 people.

He and his wife Margaret are enjoying living on the shore of a lake in a Connecticut "city of village charm" in a nine-room home that they built six years ago on the slope of a wooded hill. Their five children range from Peter, twelve, to Ellen Marie, five months. In between come Carol Anne, Beth and Dickie. While having two cars is not unusual these days, it may be of some interest that both of theirs are Nash Ramblers and they fit end to end in an elongated one-car garage. While teaching at the University of Conn. last week he spent part of the evening with Alice Hunter Kimball and her husband, Professor George Kimball of Columbia University, who was a guest lecturer there on Operations Research. She looks fine (almost no change in the 19 years) and is actively keeping up outside interests despite bringing up a boy and three girls.

Charlie Price reports from Walnut Creek, Calif. (just outside of Berkeley), where he is sales engineer for Wire Rope Mill Products of the Columbia-Geneva Steel Division of the U. S. Steel Corporation, that he has been recently promoted to Colonel in the Civil Engineer Reserves. Mike Lach sends in a note to say that he is still with Eastern Gas and Fuel Associates in Boston, and is enjoying New England. His family was increased by two since the last Reunion in 1951 by the addition of a boy and a girl, making three boys and a girl total. Dick Koegler reports from Buffalo, N.Y., that there are no startling changes. He is still at Cornell Acco. Laboratory enjoying the work as much as ever. About the same job but a little change in title—Head of the Acco. Engineering Branch—Flight Research Department. Lombardi and he are partners in a Lightning sailboat, sailing from the Buffalo Yacht Club, but no great prizes won as yet. Still thinks this (Buffalo) is a good part of the country — sailing and skiing nearby — cool summers — no earthquakes — but lots of wind — Hurricane Hazel was just another 90

m.p.h. blow as far as Buffalo was concerned. — HENRY F. LIPPITT, 2nd, Secretary, 30 Rockefeller Plaza, New York 20, N.Y.

• 1937 •

I wonder if you fellows remember Flora Crockett. Of course she is now Mrs. Gordon Stephenson and I see by the papers that she has moved from Cheshire, England, where the family has been living since 1939 to Perth in Western Australia. That's just about as far away from the Institute as it is possible to get on this planet. We hope you are enjoying yourself and look forward to seeing you on one of your return trips to this country. Colonel John A. Morrison, son of Mrs. M. R. Morrison, 143 E. Water Street, Chillicothe, Ohio, recently became chief of operations in the special staff section of the Seventh Army engineer section in Germany. He previously was commander of the 540th Engineer Group in Germany. John, a former student at the Institute, entered the Regular Army in 1947. He served in Europe and in the Pacific as a reserve officer during World War II. His wife, Elsie, and two children are with him in Germany.

John Fitz-Hugh, one of the wheels with the Edwards Engineering Corporation at 715 Camp Street in New Orleans, is having an interesting career developing, installing and testing sugar cane machinery on a world-wide basis.

In the marine and shipping fields, Edwards supplies quick-opening, hydraulically-operated watertight hatch covers, doors or steering for ships and tugs. The hatch covers are in use on ships of two French steamship lines. In the paper, roofing materials and wallboard fields, Edwards has a new movement and thickness recorder, developed by Fitz-Hugh, which records movement of machinery and thickness of material. George K. Mergerian has been named manager of marketing administration and personnel development for the General Electric Company's aircraft accessory turbine department in Lynn. Since 1948 he has been engaged in marketing research on equipment for aircraft and guided missiles as a member of the company's aviation sales organization in Schenectady.

James D. McLean has been appointed vice-president of sales of the government and industrial division of Philco Corporation, according to an announcement by James H. Carmine, president. Jim joined Philco in 1947 as commercial manager for Philco's television broadcasting station, WPTZ, in Philadelphia. In 1949, he was named general sales manager of the government and industrial division with responsibility for merchandising activities in connection with research, development and production for the Armed Forces and other governmental agencies in the fields of radar, communications, vacuum tubes, transistors, ordnance and guided missiles. He has had similar responsibility for industrial products, including microwave relay for television and communications, and television studio equipment.

C. S. Lord, who received his Ph.D. with us in 1937, has been appointed chief geologist of the Geological Survey of

Canada. In his new post Dr. Lord will be responsible mainly for organizing and directing the field work of the Survey, a task of increasing importance in view of the rapid growth of mining in Canada. He has been employed continuously by the Survey since June, 1937, and in the two previous seasons he had served as chief of party on Survey field assignments. He had already acquired extensive experience as a geologist in British Columbia in 1933 and 1934 and served as geologist for the Rhodesian Anglo-American Corporation in Northern Rhodesia during the period 1929-32. In recent years he has had immediate charge of the work of the Survey in the mainland portion of the Northwest Territories. It was in this capacity that he organized and directed in 1952 a project known as "Operation Keewatin" whereby, for the first time in Canada, helicopters were used for extensive systematic geological mapping. As a result of new techniques developed for the project the geological mapping of northern Canada is now proceeding more economically and at a far greater pace than was previously thought possible.

We just learned that John Jennings Ferguson, taken suddenly ill Monday night, died at 3 A.M. March 8, 1955, at St. Rita's Hospital in Lima, Ohio from a cerebral hemorrhage. He was 42. Jack left his office at Continental Can Company, Inc., at 5 P.M., telling a companion he was feeling fine. Later, in his workshop at his home on Warren Road when he developed a severe headache, he told his wife he thought he wouldn't attend the Kiwanis Club meeting. Instead he went to bed. At 11 o'clock when he was breathing unevenly, she called the doctor. He was taken to the hospital and a specialist summoned; but he had lost consciousness and did not revive prior to the time of his death. He had been feeling well recently except for headaches three weeks ago when he was thought to have an attack of influenza. Mr. Ferguson was chief engineer of the fibre drum division of Continental Can Company and had been with this organization since 1940. He was the only son of Judge and Mrs. E. F. Ferguson who were both killed in an automobile accident in 1940.

Born in Van Wert January 29, 1912, he was graduated from Van Wert High School in 1930, from Wittenberg College in 1934 and from M.I.T. in mechanical engineering in 1938 (Course II-A). While in engineering school he did work for the General Electric Company in Lynn, Mass., and Schenectady, N.Y. After his graduation he helped design automatic hosiery machinery for the Realsilk Hosiery Mills in Indianapolis for two years before he joined Continental Can in his home town. During his 14 years with Continental he had helped develop many automatic machines for the fibre drum industry and had assisted in buying and installing equipment in new Continental plants at Reading, Pa., Tonawanda, N.Y., St. Louis, Mo., and Pittsburgh, Calif. He was married in 1941 to Sue Welch. She and their daughter, Nancy, survive. Mr. Ferguson was a member of the First Methodist Church, the Kiwanis Club, Willow Bend Country Club, Investors

Guild and also Phi Kappa Psi fraternity. At the Spring meeting of the M.I.T. Club of Northern New Jersey we celebrated the Twentieth Anniversary of the club and heard talks by President Ferguson of the Alumni Association and Professor Arnold on his methods of teaching imaginative, creative engineering. Jerry Salny and I were the only ones upholding the honor of 1937.—W. A. JOHNS, Secretary, 34 Mali Drive, North Plainfield, N.J.

• 1938 •

Early in May a few of us in the Class of 1938 met to discuss ways in which the contributions from the Class to the Alumni Fund and the number of contributors might be increased. As a concrete result of the meeting, some members of the Class have already heard from us. Attending the meeting were Ernie Neumann, Jack Phillips, Harold McCrensky, Al Wilson, Paul O'Connell, Don Severence, Bob Johnson, Dave Acker, Paul Black, and Jack Bethel. Among the comments made, was the request that we hear from some of the men who haven't been mentioned in the notes for some time. Some news came out of the meeting. Jack Phillips is now manager of the Controls and Investments Division of General Electric Laboratories, Inc., in Cambridge. On the day of the meeting, Harold McCrensky's appointment as vice-president of Bruce Payne and Associates, Inc., was announced. He is manager of the New England Division and has been with the company since 1945.

Also in the news are Erich Nietsch, who has recently been elected vice-president of project development by Robinson Aviation, Inc., Teterboro, N.J., and John Toy, who is now chief engineer of Sidney Blumenthal and Company. Ab Byfield is now director of Development in the Research and Development Department of the Kimberly-Clark Corporation. He has been with the company for 16 years. Our Class President, Lou Bruneau, has been re-elected as President of the M.I.T. Club of New York. Some of the Class have been busy writing. Dick Muther is author of *Practical Plant Layout*, a 360-page book recently published by McGraw-Hill. Dick is also author of *Production Line Technique*, which was published in 1944. Chuck Jahnig of Esso Research and Engineering Company is co-author of the paper "Fluid Coking and Fluid Coke," which was published in *Chemical and Engineering Progress* in April. —DAVID E. ACKER, Secretary, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge, Mass.

• 1940 •

By the time this gets into print, our fifteenth Reunion will be a fond memory to those who attended. Those who were not able to attend, I am sure, are making plans for our next big reunion in 1960. The results of the election of officers will appear in the November issue of the Technology Review. Mel Jackson has been appointed vice-president of the C.G.S. Laboratories, Inc., of Stamford, Conn. C.G.S. are manufacturers of electronic components and equipment and Mel will be in charge of Government

liaison and new business. Prior to going with C.G.S., Mel served on the engineering staff at the M.I.T. Radiation Laboratory and subsequently joined Airborne Instruments Laboratory as a patent engineer and more recently served this company as manager of the contract office.

Ralph Thompson is now manager of Research for Calgon, Inc., and Hall Laboratories, Inc., chemical subsidiaries of Hagan Corporation of Pittsburgh, Pa. Ralph will be in charge of all research into industrial, commercial and residential water conditioning use of Calgon (a well-known water softener) and companion chemical products. He will also be in charge of the service laboratories of Hall in addition to his duties of directing research. As indicated above, classmates in increasing numbers are invading the higher echelons of management. Charles Wampler is not only president of the Wisconsin Telephone Company, but also was recently elected to the Board of Directors of Cutler-Hammer, Inc. Frank Penn has been elected vice-president of Minute Maid Corporation and is responsible for the production of frozen food packages outside of the State of Florida.

Louis Michelson, after a number of years in the government, in which he rose steadily until he was appointed technical director of the Research and Development Department of the Underwater Ordnance Station at Newport, R.I., has decided to go into private employ and has taken an executive position in the aircraft gas turbine division of G.E. Initially, Louis will be in Lynn, Mass., but might eventually have his headquarters in Cincinnati. Charles Eisler, Jr., became president of Eisler Engineering Company, Inc., Newark, N.J., in January. This company manufactures machinery widely used in the glass, resistance welding, radio tube fields among others. Frank Plumley, formerly purchasing agent for the Bigelow-Sanford Carpet Company, has been appointed to a similar post with the Winchester Division of Olin Mathieson Chemical Corporation.

This closes the class notes for Volume 57 of the Technology Review. The column will be back in the fall with notes from the new Class Secretary. The first issue should be full of news gathered at the reunion but, after that, the size and shape of the column will depend upon the letters received by the Secretary. So don't forget to write as the politicians would say "early and often." —ALVIN GUTTAG, Secretary, Cushman, Darby and Cushman, American Security Building, Washington 5, D.C. MARSHALL D. MCCUEN, Assistant Secretary, Oldsmobile Division, General Motors Corporation, Lansing, Mich.

• 1941 •

Mark down June 8, 9, and 10, 1956, to be saved for the Fifteenth Reunion. It's less than a year away, and will be here before you know it, so mark it down before anything else has a chance to interfere. At this writing, the plans aren't firm, but you'll each be contacted in the fall and be given the whole story then. Ed Marden is reunion chairman, with assist-

ance from Stan Backer, Ed Beaupre, Reid Weedon, and others. It looks like a real bang-up affair, and those of you who attended the Tenth have an idea how enjoyable one of these weekends is. Let's double the attendance at the Fifteenth; each of you who came to the Tenth, bring a classmate who missed the fun in 1951. Watch for the mailings, and let me know if you don't get them.

A most welcome letter has arrived from Joe Bowman (letterhead: Colorado Oil and Gas Corporation, Denver; J. S. Bowman, Vice-president. Good work, Joe) and deserves some direct quoting: "I have been out here for about a year, being headquartered midway between Calgary and Houston, the extremities of our oil producing territory. We are a young and aggressive company, attempting to grow through both the purchase of producing properties, and discovery of oil and gas reserves through exploration. It is most interesting work and covers the whole field of oil production exploration with no geographical limitations. The last time I saw you, we had two girls. We have since added a potential Red Sox candidate who has passed the first year mark. (The Sox could use him — I.W.C.) We all like it very much out here in Denver as there is plenty of outdoor weather all the year around. Despite its boom aspects, it moves at a fairly settled tempo, and we are pretty well ensconced in the usual domestic routine and activities with Virginia spending time with P.T.A., Girl Scouts, and so on, and Joe being constructive by bowling and playing golf." Thanks a lot, Joe. The Bowmans are planning to come east for the reunion next June, and we hope a lot more of you won't let a few miles stand in your way.

An eight-column headline from the Gloucester *Times* says "Dana Story of Essex Continues Honored Tradition" and the article goes on to tell how five generations of Storys have operated their boatyard, which is still in its original location on the Essex River. In days past, many deep-water ships were built in this yard and others in the vicinity. After the war, there was a boom in building druggers, but most of this work has gone to Maine ("down east"). Dana planned beyond the boom, fortunately, and now most of his business is in storage and repairs, although he still builds some small boats. He is married and has three children.

Andy Prucknicki, still in the G.E. Turbine Department at Lynn, is chairman of the building committee working on a new St. Andrew's (Ukrainian) Church in Forest Hills, to be a replica of the St. Andrew Cathedral in Kiev, which was destroyed by the Communists. This does it for another year; hope you all enjoy yourselves this summer, and we'll be back at the same stand in the November issue of The Review. — IVOR W. COLLINS, Secretary, 28 Sherman Road, Wakefield, Mass.

• 1942 •

This month we are pleased to report that Albert F. Clear, Jr., has been elected assistant vice-president as well as plant manager of the Mallory division of the John B. Stetson (Hat) Company. The article in the Danbury, Connecticut News-

Times also furnishes us with a lot of information on Al's activities since June 1942. Those of us who were at the Tenth Reunion met Jerry (Jeanne) but it takes a professional newsman to get the whole story: From Graduation until April 1946 Al was in Army Ordnance attached to the Air Force and wound up his service as a captain. He then spent a year at the Harvard Graduate School of Business Administration where he received his master's degree. Since June 1947, he has held various positions in the Mallory plant which he now manages. Al is very active in community affairs as president and director of the Danbury Chamber of Commerce, chairman of the Hat division of the American Red Cross, a former director of the Community Chest, and a member of various social organizations. Jerry and Al have two sons, Geoffrey, now five, and Gregory Stuart, two.

Also active in community work is Perry O. Bailey of Westport, Mass., who was recently named chairman of the church division for the 1955 financial campaign of the Interchurch Council of Greater New Bedford. Mr. Bailey is the proprietor of a heating contracting firm in New Bedford. Only by way of business correspondence have I elicited the information from Robert J. Fay that he is the proud father of a daughter, born last October. She is the fourth youngster in the family — one boy followed by three little sisters. Bob is a senior partner in the family firm of patent attorneys, Fay and Fay.

It is obviously impossible to get any of our local classmates to sit down and write about themselves; so, unless their names appear in the Boston papers along with a complete biography, my only source of news is to sit prospects down, one by one, around a cup of coffee — or something stronger. This month's report is on Alfred Goldis (9-46). After completing a long tour of World War II duty as a Liberator Bomber pilot over southern Europe (with leaves spent in various oases along the North African coast) Al finished up his studies in Course XV. Since that time he has been associated with the Trimount Clothing Company of Boston, the largest manufacturer of men's clothing in New England. His activities have covered personnel, payroll, and production; last fall he was elected vice-president in charge of manufacturing. He is married to the former Shirley Shapiro of Newton and they have two children, Lisa, nine, and Peter David, seven. Those of us who know Peter are sure that there is another Tech man coming along to follow his father and his uncle, Arnold Shapiro (also Class of '42). Arnie received his Ph.D. in mathematics a few years ago and since that time has been an assistant professor at Cornell University. Getting back to Al, he, too, spends quite a bit of time in community affairs, principally the Associated Jewish Philanthropies. And when not otherwise occupied serves as treasurer of Product Consultants, Inc., a firm of scientists and engineers specializing in the placement of new inventions.

A special announcement tells us that Robert and Sabina Jacobson herald the arrival of their daughter, Alice Paula. Statistically speaking she is eight pounds

on the button, 20 inches from stem to stern, and came at a convenient hour of 10:30 p.m. on Monday, May 2. All of the Jacobsons are celebrating by moving into a new home in Plainview, Long Island.

We heartily recommend a new book published by the undergraduates at Tech and distributed by the Alumni Association. It is a carefully prepared collection of the speeches and writings of the late Dr. Compton all gathered in an elegantly designed little book entitled, *A Scientist Speaks*. (And the type was set by photocomposition on a Photon machine.) The book is an admirable addition to any library, and it's free!

In addition to his other duties at Photon and at Hauman Instruments Company (as a consultant and director), your Secretary has been elected president of Product Consultants, Inc. We wish to everyone a very pleasant summer with lots of sunny days, good golfing, fair sailing winds, warm vacation weather, a minimum of mosquito bites, successful flower beds and vegetable gardens, leisure for reading, and suntans in just the right amount. Signing off until football weather. — LOU ROSENBLUM, Secretary, Photon, Inc., 58 Charles Street, Cambridge 41, Mass.

• 1943 •

Theodore Q. Eliot of Stanolind Oil and Gas Company has been named chemical plant process supervisor for the Company's Brownsville, Texas chemical plant. He was formerly located at the Research Center in Tulsa, Okla., P.O. Box 591. He received his S.M. degree in chemical engineering with our Class. Henry H. Hoadley has become Senior Staff Engineer in charge of research and research program planning at the United Aircraft Corporation at East Hartford, Conn. Henry A. Lurie and Associates, Engineers, have announced that Bernard S. Reckseit has become associated with the firm in Cincinnati, Ohio. Andrew F. Hillhouse, Jr., has been made chairman of the Red Feather Speakers' Bureau in Washington, D.C. Andy is the Washington representative of Solar Aircraft Company.

Gus Root wrote from Cricket Lane, Schenectady, N.Y., that he is employed with the General Electric Company, Power Tube Department. The Roots have six children, have built their own house, teach and call square dances and are very active in church and community affairs. Gus said his two most recent thrills were the arrival of their sixth child (third boy) and a visit back to Tech which he says looks grand and growing. I also received a letter from Bonnie and Pete von Wiesenthal of New York who announce that their first baby, Andrea Christina, was born on March 13, 1955. They live at 17 East 89th Street, N.Y. There has been some response to my postcard request for news. About 400 more cards will be mailed out during the next few months and I sincerely hope to hear from many of you during that time. These are the last notes until the November issue, in which I hope to be able to write three or four columns of news. — RICHARD M. FEINGOLD, Secretary, 49 Pearl Street, Hartford 3, Conn.

• 1948 •

It seems as though every two months enough news manages to sift down to your Secretaries to justify a column in these Class Notes. This past month we have received news about men of '48 as follows: Automation Engineering Laboratory, 1 East Putnam Avenue, Greenwich, Conn., was organized in the fall of 1948 by Richard S. White of our Class and his father, E. Cantelo White, founder and former president of the Tork Clock Company of Mount Vernon, N.Y., and by his brother, Robert C. White, former New Jersey Sales Representative of the Syntron Company. A.E.L. designs and builds special automatic machinery on a fixed price basis for production, assembly and packaging operations. The company is servicing clients in the automotive, electronic, metal working, textile, chemical and drug industries. Members of the staff include specialists in high speed automatic machinery, electronic control systems and industrial engineering.

Whit Mauzy, we learn, after being in Venezuela for two years, in February took a two-month leave of absence from his engineering work there to return home and marry Abigail Macomber and take a skiing vacation and honeymoon in Europe before returning to make his home in Maracaibo, Venezuela. Hugh Scott has joined the Radar Division of the Hughes Research and Development Laboratories, Culver City, Calif. He formerly served with the U.S. Navy as an electronics officer. Roger Sisson has become a founder and principal of Canning, Sisson and Associates in Los Angeles. Their consulting firm specializes in automatic data processing and production control systems for industry. Their role is to guide progressive managements in the utilization of electronic data processing machines for greater profits.

It is possibly not news to many of the Class that Colonel Taber, Commanding Officer of the Watertown Arsenal, received his M.S. with the Class of 1948. The arsenal, the informing article goes on to state, "is not a mass producer of arms, but a creator of new materials, new processes, new weapons, new equipment — a place which establishes in its laboratories and huge shops production know-how which it then passes on to private industry" — and so, 'tis all for another month. Write if you get work. — WILLIAM R. ZIMMERMAN, Secretary, Moraine Paper Company, West Carrollton, Ohio. RICHARD H. HARRIS, Assistant Secretary, 26 South Street, Grafton, Mass.

• 1949 •

The diversity of activities which 49'ers seem to get into certainly belies the theory that Tech training is over-specialized. Prize of the month goes to Greg Meyer whose election to chairman of the Board of the East End Federal Savings and Loan Association is announced in the Pittsburgh, Pennsylvania, *Press* for February 20 of this year. Greg is also a member of the Allegheny and Pennsylvania Bar Associations.

Recent faculty promotions at Boston College include the appointment of Joseph Bornstein of Brighton, Mass., to as-

sociate professor. Joe received his doctorate from Tech in '49, served as a teaching fellow at Tech 1947-1949 and was appointed to the B.C. faculty in 1950. Nisson A. Finklestein, formerly head of the special research and lens design department at Bausch and Lomb in Rochester, N.Y., has been named assistant to the Director of the Scientific Bureau for B. and L. Dr. Finklestein joined Bausch and Lomb in 1950. He previously was engaged in radar research for the Navy and also served as a research associate in physics at Tech.

A nice letter from Chuck Holzwarth fills us in a little on his market research work with Fiberglas in the northwest. "I am working with each of the Branch Sales Offices attempting to determine the (. . . market) potential that exists in their area for the products we manufacture. To simplify the work, we divided all the users of Fiberglas into markets. Assignment to a market category depended on the product used and the method of distribution. We ended up with over forty-five markets. The analysis can therefore get a bit complicated especially when visiting a branch area and interviewing people in all types of markets." In a nice letter, Ralph Huggett brings us up to date on his family and career activities. Ralph is continuing his work with General Electric at the Aircraft Accessory Turbine Department in West Lynn, Mass. The Huggetts were transferred from G.E.'s Jet Engine Department in Cincinnati, Ohio, last October. Ralph also was proud to announce the arrival of a second son, Kevin, in April, 1954. As an extra bonus, along with Ralph's letter was a note from his wife, Paula Kelly Huggett. I'm sure many 49'ers will remember Paula's work with the Technology Christian Association.

A release from Link Aviation, Inc., Binghamton, N.Y., announces the appointment of John M. Hunt to director of Research and Development. John has been with Link for six years and had been serving as Link's chief development engineer. A "dispatch" from the Army Home Town News Center tells us that Colonel William S. Hutchinson, Jr., recently completed the infantry field grade officer's refresher course at the Army's Infantry School at Fort Benning, Georgia. Bill's wife Sara holds down the family homestead in Vienna, Va. Also by special messenger we learn that Bill Jackman is working with I.B.M. as a Development Engineer. Bill has been with I.B.M. since October '49. He and his wife and three sons reside in Hughsonville, N.Y. From Du Pont we hear that Robert J. Kallal has been promoted to assistant superintendent in the Technical Section of Du Pont's Sabine River Works at Orange, Texas. Bob received his doctorate from Tech in September '49 and started with Du Pont the following October. His current work is devoted to nylon chemical studies. Bob is married and has two daughters.

Last year's Christmas card from Bob Lannamann comes from Oreland, Pa. Bob is married and has a very cute daughter named Nancy. Abe Perez when last heard from was working his head off. Abe worked on facsimile system development

for Alden Products in Brockton, Mass., up to 1951. Currently he is with the Advanced Development Engineering Section at R.C.A. doing work in connection with large-scale business machines. In his spare time he is attending evening courses to complete his Ph.D. requirements in physics at Temple University and get his E.E. degree from the University of Pennsylvania. Ken Pettingill has been working as a plant engineer for Arnold Hoffman and Company in Cincinnati, Ohio. Previously he had worked as a safety engineer for Improved Risks Mutuals, White Plains, N.Y., and on pilot plant development for Arthur D. Little. Ken is married and has four children. A recent crisis occurred when all four children came down with the mumps at the same time.

Dick Pitler has been working as a metallurgist in charge of valve steel research for Allegheny-Ludlum Steel Corporation in Watervliet, N.Y. Dick is married and has one son two and one-half. Barbara Feeney Powers is living in Rockford, Ill., where her husband Lee (Tech '50) is working for J. I. Case Company. Barbara reports, "We live in the country on a two-acre place with kittens, chickens and lots of room." Apparently they need the room; at the time Barbara wrote she reported that the Powers' fifth addition to the family was on the way. Joe Quigly is working with Cohell, Gordon, Reindel, and Ohl at 63 Wall Street in New York. Joe finished Harvard Law School in June 1950. After service with the Navy from November 1951 to January 1954 he returned to law practice. Joe reports that most of his work involves corporate litigation in regard to patent disputes.

Frank Roman attended last year's reunion and reported at that time that he was working for Raytheon on servomechanisms at their Newton plant. Frank is also attending Northeastern Evening Graduate School studying for his M.S. in Electrical Engineering. Frank is married and has one child. Harwood Rowles has been continuing his work with Fenwal Laboratories in Framingham and is now Chief Methods Engineer. Woody has it made. At last report he is "maintaining bachelor quarters with three other fellows in a very delightful setting — caretaker's house on an estate by a reservoir. Lots of lawn, shady trees, and cool drinks for the pleasant summer evenings."

The Buffalo, N.Y., *Evening News* for November 3, 1954, reported appointment of Fred Reusswig as assistant to the President of the Moog Valve Company, East Aurora, N.Y. Fred was president of the Buffalo JayCees in 1953 and had previously worked as a designer in the Hydraulic Division of the Niagara Mohawk Power Corporation. Ed Rudnick has recently resigned his work as Director of Research and Quality Control at Wamsutta Mills in New Bedford, Mass. Ed has been very active in quality control work having founded the Buzzards' Bay Section of the American Society for Quality Control. National Vice-chairman of the Textile Division, ASQC, he is the author of many articles and technical papers on quality control.

Our most recent hint as to the activities of Gene Skolnikoff was the appearance

of his name on stationery bearing the letterhead of the Industrial Liaison Office at Tech. First Lieutenant Nathan Sokal is currently working at M.I.T.'s Lincoln Lab. Nathan was working as a civilian with Lincoln also from July 1951 to 1954. He and his wife Zelda send along word of the birth of their son Alan David last January 24. They are living in Waltham, Mass. Ed Somma is continuing his work with the Waterbury (Conn.) Machine Tools and Products Company where he is vice-president. Ed has his M.S. degree and has been married six years. Harry Spencer and Evelyn Rezen of Germantown, Pa., were married last November. After their wedding trip to Bermuda, Harry and Evelyn have set up housekeeping in Philadelphia. Charles Sutherland is living in Dobbs Ferry, N.Y., and is working as a sales engineer with the Collins Radio Corporation. Chuck joined Collins in March 1954 after 39 months service with the U.S.A.F.

Stu Powell is working as district manager for the Reinhold Publishing Company in New York. Stu is married. Harrison Thibault is continuing his work as a development engineer for the Draper Corporation in Hopedale, Mass. Tib is married and has two children. He also filled us in on Joe Pigott who is working with the Osborne Manufacturing Company in Cleveland as chief of inspection. Tom Toohy, our Class President, is currently working as a sales engineer for I.B.M. in New York. Our last word about Tom Tsotsi was his report of impending induction into the service a year ago. Also at I.B.M., Herb Ward was recently promoted to supervisor of Advanced Development Planning. Herb joined I.B.M. in January 1952 as a technical engineer.

Ed Walz is working as an industrial engineer for the Alfred Hale Rubber Company in Boston. Ed was able to report on other '49ers also. Stephen Toth, working as a branch sales manager for Minneapolis-Honeywell and Howard Kothe, working as a patent attorney for Carbide and Carbon Chemicals Corporation. Isabella Weinberg is now a member of the technical staff of the Radar Division, Hughes Research and Development, Culver City, Calif. She was formerly with North American Aviation. Paul Weamer is working for Daniel Mordecai Company, food brokers, and at last report was to move to Portland, Maine, last fall. Paul is married and has one daughter.

Tom Weil is continuing his work with Vitreous Steel Products Company in Cleveland. They are porcelain enamelers with general offices in Cleveland, Ohio, and a plant at Nappanee, Indiana. Tom is married and has one daughter Nancy, age one. Norval White missed last year's reunion with the reported plans for a trip to France. Norval was to spend the summer at the Fontainebleau School of Fine Arts. He has been doing work in the Princeton Graduate School of Architecture where he was scheduled to receive his master's degree last February. His trip to France was sponsored under a Margaret Bibble Scholarship.

The Bridgeport, Conn., Sunday Post for October 17 tells us of the marriage of Otis G. Lewis and Peggy Fritz. Otis is stationed at the Army Chemical Center in

Edgewood, Md. Mat Leupold is currently working as operations officer at the M.I.T. Naval Supersonic Laboratory. Mat is living in Waltham and is married. Carl Lindstrom is working as a chemical engineer for Ionics in Boston. He received his master's degree in science at the M.I.T. Chemical Engineering Practice School. Harry Lambe is continuing his work as a chemical engineer with Arthur D. Little. Harry is married and lives in Somerville, Mass. He received his master's degree in science from Tech.

Frank McCarthy reported last spring that he was studying at Tufts Medical School. After leaving Tech he received his M.A. degree from Harvard. Ken McGrath has joined the ranks of junior executives as assistant to the vice-president at Hunt Spiller Manufacturing Company. Ken has his S.M. degree and is married. The Malden, Mass., News for last November 8 reported that Austin D. McGuire was awarded his Ph.D. from the University of Rochester (N.Y.). Howard Millard must hold some kind of a record for holding down the most jobs all at the same time. In addition to his work with Liberty Mutual Fire Insurance, Howard is, or politics being what they are, was building inspector for the town of Westwood, Mass., and also works as a consulting engineer on his own. He was chairman of the Finance Committee for Westwood in 1953. On top of all this Howard is married and has three children. John C. Miller is continuing his work for The Formica Company as a sales engineer for industrial laminates. Your Secretary, being an ex-Formican, used to see John occasionally on his trips to the home office in Cincinnati. Judging from his appearance marriage suits him fine. Bill Mitchell is continuing his successful career with Reliance Electric in Toledo. Bill is now a branch manager. In a cryptic letter to Archie Harris last spring, Roger J. Moore reported a change of address from New Rochelle, N.Y., to Rome, Italy. If any of you have any further information, let us know.

Joseph A. Murphy reported at the reunion that he is working for the Boston Edison Company. Joe is married and living in Brookline, Mass. Pete Murphy is working in the Product Sales Division of Reliance Electric. Pete with his wife and two children are living in South Euclid, Ohio, a suburb of Cleveland. Paul Ostergaard is working as an acoustical engineer with the Carrier Corporation in Syracuse, N.Y. According to the New Bedford, Mass., Sunday Standard-Times for January 30, 1955, Chester M. Patterson and family found themselves right in the middle of the recent Costa Rica revolution. The strafing of the capital city, San Jose, by a Venezuelan pursuit plane happened right before their eyes. After leaving Tech, Chet worked for a time with the Beetle Boat Company in New Bedford on the development of fiber-glass racing shells. When the Korean War broke out he joined American Cyanamid as a trouble-shooter. His current assignment for Cyanamid started in November, 1953, and involves supervision of construction of a modern office building in San Jose. The Pattersons have two children.

Kemon Taschioglou is currently working as assistant to the vice-president in charge of engineering at Polaroid Corporation, Cambridge, Mass. Kemon went on from Tech to get his M.B.A. at Harvard and has also served two years in the Air Force. Art Van Stolk made last year's reunion from Rotterdam, Holland. Art is married and has two children. He is working as manager with Van Stolks Koinklijke Graanhandel in Rotterdam. If you know what it means, please send along a translation.

Since many of these items are being reported many months after their receipt, don't hesitate to write and fill your Secretary in on the up-to-date story. Best wishes for a prosperous and enjoyable summer.—O. SUMMERS HAGEMAN, JR., Secretary, Technical Marketing Associates, Inc., Concord, Mass.

• 1950 •

If you are ever curious about anyone in our Class, I have quite a card index file with a fairly complete case history on each and every one of you. If your name ever appears in the newspaper clippings and it gets to me, I file it along with your card. Do you have all the clippings announcing your engagement, wedding, and so on? If you'd like some copies, just drop me a line and I'll try and supply the information and/or clippings for you. Which only goes to prove that this column can only be as interesting and informative as you—the members of the Class—make it. Please send me any news concerning your jobs, families or pastimes. This is the last issue of the current series, but we have a long summer ahead of us in which you can fill a few pages with this and that about yourselves.

The annual Walker Assemblies Ball was held in April, as usual, and being an old faithful Walker man myself, Ruth and I attended the festivities and, as usual, the boys put on a splendid show and ball. Phil and Jean Byrne, Charlie and Cindy Lusher, Barrett and Joy Whitman, Hank and Peggy Boyles, Sal and Vera Marshall, Fred Werner and his Mrs. and Jay Bedrick and his Mrs. to be were all in attendance.

Rich Rorschach, my trusty representative in the "Great Southwest," has come through with news from down that way. "Chuck Nolan was married to a Fort Worth girl (Nancy Essenwein) last Thanksgiving. Chuck is in business under the name of Nolan Brothers Construction Company. He has just received a couple of nice paving contracts for an airfield up near Elk City, Okla., and at the airfield here in Carswell. T. K. Stromsted was down from Chicago for Chuck's wedding.

. . . I got a Christmas card from Jake Corrie, who is in Caracas, Venezuela. Curt Snow and better half now are proud pa and ma. They produced a young 'un in March. At the Dallas M.I.T. Meeting in January I saw St. John Garwood, who is, of all things, a lawyer in Houston. It seems he has forsaken the slide rule boys and gone over to the big money field. Bob Magill just recently moved from Tulsa to Denver as District Manager for Braden Steel. You may have noticed on the envelope that I have moved to Fort Worth. I think it's only temporary, that

is, only for a year or so. Then it's very possible that I'll be up in the Panhandle Area looking for oil and gas." Thanks for the information, Rich, and name the first well you strike "Jackie's Dark."

This column is being written pre-reunion and you are reading it post-reunion, but from all indications a few weeks before, the weekend of June 11-12, 1955, will be going down in M.I.T. history as the biggest fifth reunion yet. For those of you who did attend, sit back and start thinking about the tenth reunion, and for those of you who couldn't join the gathering of the clan, make plans to read the November issue of this column and catch up on all the doings of the Class. As an added precaution before the weekend, we've notified Harvard crew to stay clear of Falmouth. Buzz Scott is going to do some fancy sailing in the new Tech dinghies and we don't want any more collisions. However, just in case, the committee has taken out an insurance policy on the dinghies. Be seeing most of you at the Coonamessett. — JOHN T. WEAVER, Secretary, 24 Notre Dame Road, Bedford, Mass.

• 1951 •

Another scholastic year has rolled by and this will be my last bit of conversational chatter until the fall. Hold up working so intently on your vacation plans and spend a few minutes with old (?) '51. Incidentally, for you long-range vacation planners covering 1956 — how about scheduling a few days for our first fifth-year reunion?

Having left the U.S. Air Force, Fred Weitz renewed his acquaintance with civilian life and also joined our married ranks. In April Fred and Margaret Emily Booton were married at Chester, Va. Congratulations. Fred! Tony Kurtz and Margaret Geilich were married at Brookline, also in April. Tony is doing research work for Project Lincoln and also working towards his doctorate in physics and physical metallurgy. Allen Larsen sent us a short note on his activities. Back in October, Allen and Esther Madsen said "I Do" at Providence, R.I. Allen is still working at Raytheon in Newton and reports that work on hydraulic control systems for radar antennas keeps him mentally stimulated. Best of luck to you men!

Shifting to another vital statistics area, we find that Sir Stork made a landing at the home of Donald and Anita Crone-meyer. The newcomer: Paul David. Don is a physicist at G.E. and lives in Central Square, N.Y. Bob Richards joined the staff of the Du Pont Company's Yerkes Research Laboratory as a research engineer. Rane Curl is with the Shell Development Company Research Center (Mechanical and Electrical Engineering Section) at Emeryville, Calif. Ken Harms is working with the Poymer Corporation at Reading, Pa. Lieutenant Marty Greenfield is stationed at Barksdale A.F.B., La. Bob Evans is associated with the Laboratory for Electronics in Boston.

The Class of 1951 was represented at the atomic tests being held in Nevada. Corporal Mike Chotkowski was one of the soldiers selected to participate in Exercise Desert Rock VI. This exercise is a part of a program designed to familiarize mili-

tary personnel with the effects of atomic weapons. Shifting back to the East, we find that Jim Ballou, now vice-president of Highwood Homes, Inc., is busily engaged in construction work covering a home development program that will total over a half a million dollars. Jim is doing some of the design work covering two-story homes and some split-levels. The new models will be designed for families with three and four children where space is a factor. It is hoped that the 360-acre community will accommodate 150 homes as part of a long-range building program.

Bob Pfaff and Karel den Tex have recently been promoted to associate engineers at the I.B.M. Research Laboratories. Karel is one of the pioneer members of the Poughkeepsie Audio Society (Hi Fi Activity). Bob is working on the I.B.M. end of the joint I.B.M.-M.I.T. Defense Project. In signing off, I would like to wish all of you a healthy and relaxing summer. Remember, notes or letters will be heartily received. Station S.J.M. now signing off for the summer: Let's make the 1955-1956 a big one for '51. — STANLEY MARCEWICZ, Secretary, c/o The Lorraine, Route 2, Highland, N.Y.

• 1952 •

The Class of 1952 has been strangely silent for the past few months. I guess it's just spring fever or the like. Just thought I'd bring everything up to date with this column to end our third year out with a shout. I guess it is just that those of us left unmarried are a hardy band of souls. In any case, the number of marriages in the past few months was very few. Let's see: Frances Cygan of Guilford, Conn., became Mrs. Brad Sack on November 6 (quite a few months ago, I see). Brad and his wife are now in the Boston area, as Brad is associated with Samuel Glaser Associate Architects in Boston itself. Donna Chickering of Belmont, Mass., was married to Bob Summerville a little more recently, February 22. The Summervilles are now happy residents of Cincinnati, Ohio, unless the Army has gotten to him by now. And back in December, Marian Connor of Allston, Mass., and Ed Tarbox were wed. It seems that the Tarboxes are now living in Arlington. John Ward was a member of the wedding party. Nothing more recent, I'm afraid, in the line of marriages; however, there's one new little 1952'er called Wendy Anne Kandel. She was born on February 7, in Brooklyn, N.Y., to Al and Fran Kandel. Al is presently working for the Mergenthaler Linotype Company in Brooklyn.

And now a few cullings from the mailbag: Gus Rath writes from Dayton, Ohio: "Bob Schwanhauser is now in Dayton working as a rep for Ryan Aircraft Company. Phil Schirm is still in Cincinnati working for the Kett Corporation (engineering consultants) handling government contracts. I understand Larry Mayer is in town working for Alcoa. He is engaged to a Dayton girl or maybe even married by now. Chuck Stoddard, who was here while in service, has started his own business in Fairborn, Ohio, selling and servicing sports cars. I believe his company is called Sports Cars, Inc. Bill Levine is at the Field working as a project engi-

neer in the Aerial Reconnaissance Laboratory. I'm still working at the Aero-Medical Laboratory. In June Clo and I (that's Mrs. Rath) will be moving to Columbus, Ohio, so that I can finish up my master's in industrial engineering at Ohio State over the summer. I expect to continue on toward my Ph.D. in psychology and industrial engineering immediately thereafter. I'll be working at the Aviation Psychology Laboratory while attending school. This should take care of me through 1957." Thanks, Gus, for the note.

Bob Walsh, the inveterate bachelor, writes: "Guess what? Over the past month I got engaged, left the New York Chemical Procurement District to become a civilian leaving your troubles in still newer hands, and went to work for the California Oil Company (Calso). Yes, it's true. One of the last remaining bachelors in 1952 has started down the road to final capitulation. On Easter Sunday, my engagement to Carol Teston of North Plainfield, N.J., was announced. Still no definite wedding date has been set, probably some time next winter though. I'm doing production trouble-shooting and economic analysis for the technical service group at the Perth Amboy Calso refinery. The work is very interesting and holds great future promise." I'll be at your wedding with bells on to chortle, Bob. And just general chit-chat from around the Boston area, Bill Vogt has just been elected associate editor of the Harvard Law School Record as well as president of the Bull and Bear Club. Bill is now a third year student at the Harvard Law School. Nice going, Bill. Bob Briber, a recent expatriate from the Army, has recently been appointed administrative assistant to the President at M.I.T. Bob is now establishing the Boston office of Bachelors, Unanimous on Beacon Street after some close calls out Colorado way. Andy Wessel has almost reached the end of the road here at the Business School. He expects to be heading back Norway way after graduation in June to take up the art of soldiering for a few years.

Also ready to graduate here is Harry Kradjian, future still uncertain. Dick Kilcup and Marylou, his wife, are running a booming real estate business up Peabody, Mass., way. Frank Gauntt heard from wandering around Boston. Bruce Wallace in Army down at Army Chemical Center, Md. Dirk Plummer now doing atomic energy work with American Machine and Foundry in Stamford, Conn. Ed Selig seen visiting here at the B-School. Still here at the B-School getting ready for finals are Jack Copenhefer, Bob Danforth, Sandy Kaplan, Lou Karvelas, Ted Parsons, Jim Reese, Dave Weber, Seymour Weintraub, Walter E. Dietz, and Sarkis Zartarian, Jr. And from an authoritative source comes word that one J. Edward Schwartz is sporting a private in front of his name. Ed graduated from the B-School back in 1954. Another one of the '52ers who graduated with Ed at the same time was Cieko Neunhoffer, who is now selling organic chemicals for the Dewey and Almy Division of the Grace Chemical Company.

As for me, I have almost struggled through my first year at the B-School. I

will be spending the summer in the Springfield, Mass., area working as assistant to the Treasurer of Associated Engineers, Inc., an engineering consulting outfit. For those of you who want to write me, the best address is my home address which follows. I expect to be seeing quite a few of you around Springfield, Boston, New York, or the Tanglewood Music Festival on week ends.—**STANLEY I. BUCHIN, Secretary, 150 Tryon Avenue, Englewood, N.J.**

• 1953 •

Since this is my last opportunity to write a column in Korea (possibly the last column of any class to be written in Korea), I think it appropriate to offer a few final words for this issue of The Technology Review. As of this evening (May 8, 1955) I have about two weeks remaining in this "Land of the Morning Calm." Last night Doug Meyer and I spent the evening together at a party at the Officers' Mess of the 13th Engineer Battalion.

Doug completes his 16-month tour on about the ninth or tenth of May, but will probably return to the States on the same ship as I do. With this curtailment of tour (from 24 to 21 months) both of us should be released from the service in the vicinity of May 31. As I recall Jul Greenebaum, who has spent his Far Eastern tour in Japan, should also be released at the same time. The status of this column for the past few months reminds me of a portion of last evening's conversation. Doug and I were discussing the degree to which each of us has minimized his activities in recent weeks. We both agreed, as is usual when the rotation date looms closer, that we had begun "to slack arms."

In the past few weeks, word of two weddings that occurred in December of last year has drifted across the blue Pacific traveling at about the same speed as that Liberty ship on which I came over. The former Ruth V. Casten of Newton Centre, Mass., was married to George B. Hegeman. Ruth graduated from Wheelock College, and it looks as though she will be an Army wife for a while. Florence M. Newton became Mrs. Howard E. Wing, Jr., at the naval training station chapel in Newport, R.I. At the time of the wedding, Howard was attending Naval Officer's Candidate School.

Three more of our classmates have donned either Air Force blue or Army khaki. John C. Hilton completed his flight training at Reese Air Force Base, Texas, and was awarded the silver wings of Air Force pilot. The Army men are Charles G. Inman, and Henry S. Slayter. —**VINCENT W. BRONSON, JR., Secretary, P.O. Box 409, Danbury, Conn.**

• 1954 •

Time is running out on this school year at M.I.T. and soon quite a number of those who stayed on for work on master's degrees will be departed from Cambridge. Among those who are leaving are Bob Reichard, Jack Zubaly, and Tom Gibbs. Bob at present is planning to get his degree in June and then is not sure as to where he will go to work. Jack plans to wind up his work this summer and then go on active duty with the Corps of Engineers at Fort Belvoir, Va. Tom also has

military duty with the Air Force and goes in at the end of May. He has handled news of 1954 Alumni here at Tech and has done a darn good job. More power to regional secretaries who do as fine a job! Among the other men around school leaving this year are Dan Lister, Harry Notarys, and Klaus Zwilsky. Lister and Zwilsky plan to go to work while Harry is going out west to Cal Tech's graduate school. Harry is going to take up physics after a rough year as captain of the Walker Staff. Among those in the Army that I've heard about are Kev Woelflein, now in Germany, Dick Sherwood who is at Westover A.F.B., and Jack Preschlack who is at Elgin A.F.B. in Florida. Bob Avakian left for Japan in March.

Being an old San Antonio resident, I like to hear from all the classmates who go down to Lackland A.F.B. for pre-flight training. Dick Walker is one of the more recent members of the Class to get down that way. He was there in time to see the Fiesta San Jacinto which is a week long holiday in celebration of Texas Independence. Richie thinks that Texas isn't quite where he wants to be, which seems to be a fairly typical reaction to all New Englanders who wander down to that part of the country. Ernest Abrahamson is planning to stay on at school for a doctorate in metallurgy. Yours Truly is also planning to do the same in geology and I understand Tony Turano is going to stay with Course X for a while. Wright-Patterson A.F.B. is the place to go for publicity, it seems. Ronnie Lovasz has had quite a spread in some of the New York papers as a food engineer who has found his place in the Air Force. From what I hear about the job, Ron is assistant Club Officer. He is becoming an authority on food preservation and the treatment of food as a science, according to the article I have in front of me. George Perry, who is also at Wright-Patterson, might give us a testimony to the food at the Officers' Club. Charlie Burnham, Larry Holmes, and Stewie Smith are to report there in June. Stewie has been in Houston with Shell Oil up to now.

I got a very nice note from Paul Valerio who is in Brooklyn working as a structures engineer. He apparently hasn't been doing only structural work as he intends to marry Agnes Bellucci within the year. Congratulations, Paul. Tom Henderson and Dick Nilson were graduated from Newport O.C.S. and are now Ensigns in the U.S. Navy. Dick is bound for Florida, while Tom is in California. John Bradshaw, after a brief tour of duty on the East Coast, is now in the Canal Zone. Coley Bresee was on duty with the Air Force. However, his father died unexpectedly, and Coley has been on leave to straighten things out. Rich Wilson is in the army and was at Fort Bliss. He has a son, Peter. Washington, D.C., is home for quite a few men of 1954. Chuck Masison writes that he, Jack Graham, Fred Zappala, Joe Pennimpede, and Dave Sternlight are also there. Bob Peters is also there working in a classified position. Mike Boylan is in the Middle West and Jim Klapmeier is in St. Paul. Jim is getting along fine but feels that the skiing out there doesn't begin to compare with that of New England. Well that's about

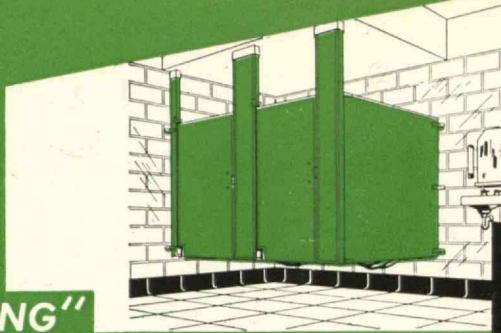
all the news for now. —**DAVID R. WONES, Acting Secretary, 37 Bay State Road, Boston 15, Mass.**

• 1955 •

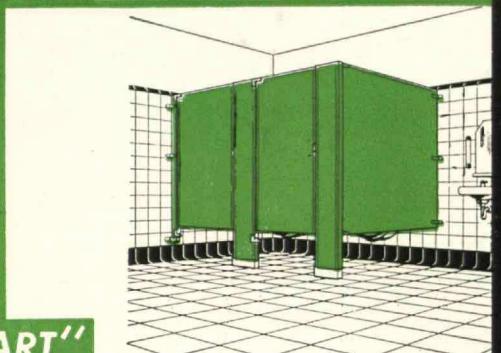
The Class of 1955 is scattering far and wide, but we're trying to keep an eye on everyone. Farthest flung are our scholars who are going abroad. Len Wharton will be studying in England on a Marshall scholarship. Fulbright scholars in architecture will be Harvey Hoshour, who is going to Italy, and Bill Stierli, who is going to Denmark. Heading for Germany are Russ Collins and Bob Kolenkow. Bob is also joining the ranks of the married men; he's marrying Anita Bingham from Radcliffe in September. Dave Nasatir is finally giving up those trips to Holyoke; he and Marilyn Jacobson will be married in August, and both will be going to graduate school next year at Stanford. Also California-bound will be Dave Brooks and Tony Haftka after their weddings in September; Dave is going to Cal. Tech. for graduate work. Another September wedding will be that of Dave Kramer and Sandy Saltzman. They will be in N.Y.C. next year where Dave has an assistantship at Columbia.

Bert Schafer and Alice Lieberson of New York City were married in June, and they'll be returning to colorful Cambridge, where Bert is turning his talents to history of science at Harvard Graduate School. Frank Buck and Linden Crabb were also married in June, and are heading for the deep South, where Frank will be revolutionizing the textile industry. Jim Storey and Carolyn Seacrest will be married this month, and they'll be back in Cambridge, where Jim is going to Harvard Law School. All-Tech wedding of the year was that of Ella Paton and Dick Cardener in June. The Cardeners are going to Detroit, where Dick will be working for Ford. Others in the caravan to Ford are Ash Stocker, Bob Morgan, Dick DiBona, all of whom will be in the Special Products Division at Dearborn. Dale Gillette will be working for Mercury in Detroit, and Pete Peterson will be with the Eaton Axle Company, also in Detroit. Michigan-bound too are Harry and Peg (Heinzman) Schreiber who will be in Pontiac, where Harry will be working for General Motors.

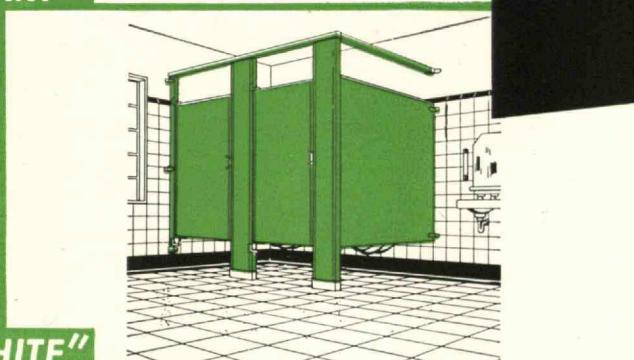
Other honors this year went to Steve Weingram, who won a National Science Foundation Fellowship and will be doing graduate work at Princeton. Al Schell also got an N.S.F. Fellowship; he'll continue in VI-A. Joyce Davis won an Atomic Energy Commission Radiological Physics Fellowship and will be rotating between the University of Rochester and Brookhaven. Don Brennan won a G.E. Scholarship and will stay at M.I.T. for graduate work. Others who haven't had enough of the Institute are Bob Kohler, Gil Davidson, Marty Glasberg, Kevork Balekjian, Fred Hennie, Tom Stockham, Hank Weber, and Jane Hodgson, all of whom have teaching assistantships. Up the river at Harvard Law come September will be Tom Cantrell and Marc Gross. John Wing and Joe Saliba will be at the B School. —**DENNY SHAPIRO, Secretary, 426 Beacon Street, Boston, Mass.**



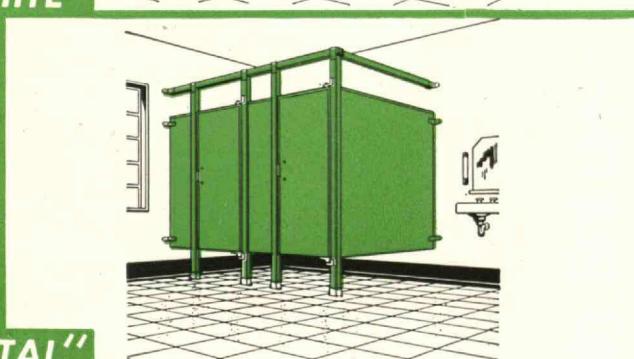
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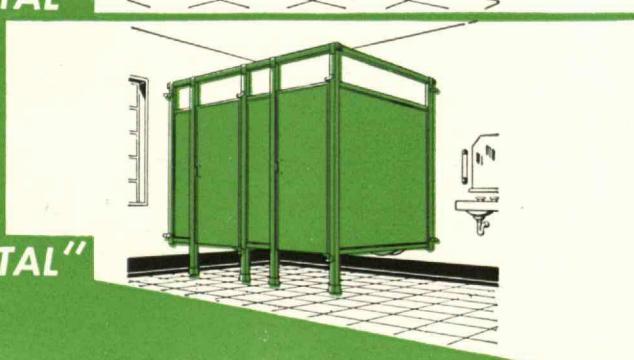
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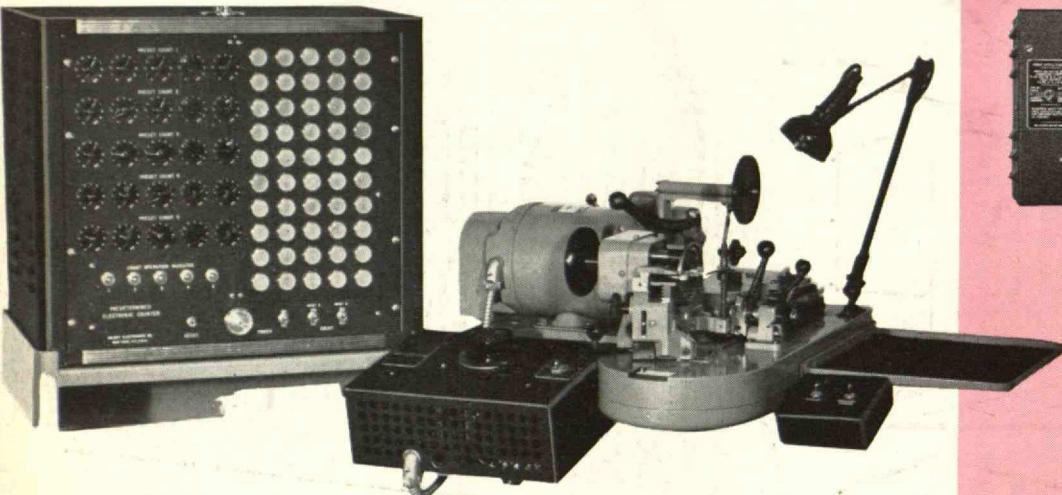


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